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## Ophthalmology for 1928

WALTER BAER WEIDLER, M.D.,  
New York City.

In reviewing the literature for 1928 there are few contributions of real interest. This is especially true in the matter of the non-operative treatment for cataracts. The idea of the non-operative treatment for cataracts is not new, but the method suggested by Davis was an entirely new form of treatment. Much interest was naturally excited by his papers and a number of men have made efforts to prove the efficacy of this treatment but each investigation brought forth the same report; i.e., an inability on the part of these men to get the results claimed by Davis. The reports all have been adverse to this method of treatment.

As regards the use of adrenalin and glaucosan in the treatment of glaucoma, experience has shown that they are both drugs that must be used with the greatest caution, because an acute attack of glaucoma may result from the instillation of adrenalin or glaucosan (Bohm).

### Anatomy—Physiology—Diagnosis—Therapy

THE "MONGOLIAN EYE."—Gifford (I) begins with the statement that there is no such feature as a Mongolian, i.e. a "slant eye" with the outer canthus turned up. He has examined hundreds of photographs or individuals themselves of different Mongolian nations and finds not over 10 per cent of slant eyes. There are actually more such eyes in Caucasians if we make actual measurements of the outer canthus, and he found nearly 15 per cent. However the Mongolian does give the impression of slant eyes while the Aryan does not. We must therefore make a study of the causes of these illusions. The Mongolian eye is a "slit eye," with narrow palpebral fissure—this being due to the redundant tissue in the eyelids. It is a superficial eye, for in the Mongol the frontal sinuses are poorly developed. The external

portion of the eyebrow is poorly developed. The high cheek bones and the sunken bridge of the nose may affect the expression of the eye. Finally there is the third fold at the inner canthus, which is actually a Mongolian peculiarity, from 50 to 60 per cent of all examined showing it. This fold is a rudimentary epicanthus. The illusion of a slant may be fostered by the high cheek bones, the slit like palpebral fissure, the flattened supra-orbital region and poorly developed outer eyebrow. The author is able to show by photographs that a true slant eye in an Aryan escapes observation because the eyeball is deep-seated and the palpebral fissure wide; while true eyes in a Mongolian may give the impression of a slant from the factors above mentioned.

GRAPHIC REGISTRATION OF THE PULSATORY VARIATIONS OF THE EYEBALL.—Wegner (II) gives us a brief preliminary communication from the eye clinic at Griefswald. It is already well known that the Schiötz tonometer sometimes shows the effects of pulse waves. When the blood rushes into the intraocular vessels the envelopes of the eyeball are distended and if the intraocular tension is increased. The pulsatory disturbance is all the greater, and must reach a maximum when the intraocular pressure equals the diastolic blood pressure, or exceeds it. The variations diminish under the opposite conditions. In order to secure sufficient variations the author seeks to increase the intraocular tension artificially. One may use the Bailliart dynamometer and the application of air pressure. In this brief article the author does not go into the subject of apparatus which will form the subject of a second paper. He merely shows some curves, in which the curve formed by variations of pressure in the eyeball is compared with the ordinary pulse

curve as measured in the carotid. The two curves show a similarity and synchronism although there are notable differences. By varying the artificial intraocular pressure the bulbus curve shows fluctuations. In the curve reproduced in the paper the intraocular tension was 40 mm. Thus far the author draws no conclusions as to the ultimate value of this possibility.

**EPHEDRIN IN OPHTHALMIC PRACTICE.**—Schoenberg (III) has tested this remedy in several hundred patients. First, as a mydriatic. The concentration used was 1 per cent to 3 per cent but at the close of the period he had decided that the 1 per cent was sufficient. This solution is sterilized by boiling, is permanent. One to 4 drops are used for dilatation which develops in from 15 to 45 minutes and does not affect the accommodation. The dilatation is of relatively brief duration but long enough for an ophthalmoscopic examination. If desired contraction can be hastened by 1 per cent pilocarpin muriate. No toxic action has as yet been seen. The short duration of the mydriasis gives ephedrin a decided advantage over atropin and homatropin. The new drug does not cause corneal anesthesia nor does it blanch the conjunctiva. It can replace adrenalin in the novocain-adrenalin formula and the author has done several enucleations under this anesthesia.

**Comments:** Schoenberg does not mention if he saw any increase of tension in any of the eyes he subjected to the use of this drug. If this be true then there is the additional advantage in the use of ephedrin; i.e., the freedom from causing any of the symptoms of glaucoma.

**OCULAR TUBERCULOSIS: TUBERCULIN THERAPY IN OCULAR TUBERCULOSIS.**—Berghausen has treated 17 cases of tuberculosis of the eye in various tissues of the eyeball, after the diagnostic use of tuberculin. Ten of these showed rapid improvement which was satisfactory to the patients who were able to resume their work. Of the other 7 all but one or two showed some improvement and in one case there may have been an error in diagnosis. *He believes that any form of ocular tuberculosis will respond to tuberculin injections.* Reactions were not aimed at but were not unwelcome. If tuberculous lesions are present elsewhere the general treatment for the disease must be given. In any long standing or recurrent disease of the eye we should suspect tuberculosis and make a diagnostic tuberculin test.

In the Mayo paper advantage was taken for a microscopic study of two eyes enucleated for tuberculosis as a last resort. Clinically the disease was a recurrent iridocyclitis but this picture is deceptive for the primary involvement is probably always in the sclera although this shows involvement only at a late stage. Deep tuberculous scleritis may cause no symptoms while cyclitis may simulate scleritis. From the primary implication in the sclera the disease may slowly extend to the other regions of the eye, causing various clinical pictures.

**OCULAR TUBERCULOSIS.**—Comments: Derby, who has been a most ardent advocate of the use of tuberculin has now almost entirely given up the use, whereas Wood, Jackson and Wilmer are still of the opinion that it has a very definite place in the treatment of ocular tuberculosis. After fifteen years of continuous use of tuberculin I am convinced that it clears up these tubercular affections of the eyes in a way no other form of treatment does. One can not call it a cure but it undoubtedly arrests the condition, and in some cases cures. Wood states that the general confidence in tuberculin appears to be growing, and justifiably so. At Johns Hopkins Hospital the intro-dermal diagnostic test has been adopted, and thus far they have never encountered a focal reaction in the eye. In their use of tuberculin injections

remarkable and convincing therapeutic results are frequently observed, while in no instance have any untoward results attributable to the use of tuberculin been observed.

This has been my own experience and convinces me of its great value in the treatment of all forms of ocular tuberculosis. Wood concludes his article in this manner:

I. Great care should be exercised in the diagnostic use of tuberculin to avoid focal reactions.

II. The initial dose of tuberculin should always be very small, and graduated in relationship to the degree of hypersensitivity.

III. Tuberculin therapy should be instituted only after all manifest foci of infection have been eradicated, and should not be started until the patient has recovered from the effect of the eradication of such foci of infection.

IV. After the treatment has been finished, the patient should be watched for a return of the hypersensitivity.

In an editorial of the *Journal of the American Medical Association*, Sept. 1, 1923, we have the report of an outstanding bit of work done by Seibert (*Am. Rev. Tuberc.* 17: April, 1928).

Normal persons fail to respond to the introduction of extracts or other products of the tubercle bacillus whereas the Tuberculous react locally, focally and generally.

The question as to what was the active principal that gave this reaction has always been in doubt, but Seibert's work has demonstrated this substance to be a protein and has been able to crystallize this substance. The fact that this substance has undergone five, ten and fourteen recrystallizations without loss in its specific biologic activity, leaves little further doubt that the active principal in this case is protein.

The protein is a product formed directly by the tubercle bacillus, since all of the tuberculin used was made in a non-protein medium.

**ROLE OF THE ARSPHENAMINES IN THE PRODUCTION OF OCULAR LESIONS.**—It is not denied that these remedies are still of the greatest service in syphilis of the eye but it should be known that they can cause three distinct types of ocular reaction. The author Zimmerman (V) does not apparently refer to the use of arspenamines in non-syphilitic affections. The first or true toxic type comprises lesions due to the toxic action of the arsenicals—conjunctival hyperemia, transient myopia, retinal and vitreous hemorrhage, chorio—and neuroretinitis and corneal necrosis. In the second group are placed the cases of Jarisch-Herxheimer reaction, such as can occur only in syphilitics, in as far as they affect the eye. Apparently all consist in the activation of old more or less quiescent lesions. In optic neuritis and tabetic optic atrophy these activated lesions may be severe and disastrous. In the third type the mechanism appears to be as follows: the patient has been treated for secondary syphilis by the arspenamines, but insufficiently. The spirocheticidal action has been pronounced and as a result the antibodies have had no chance to form. Surviving spirochetes should any exist may be roused to activity in time and may find the body defenceless. The exact conditions which develop in the eye are summed up as neuro-recurrence and iridorecurrence. In the former some of the cranial nerves suffer—cochlear, vestibular and optic for the special sense nerves and the motor oculi and abducens for the other type. In some of these recurrences the symptoms may be so severe that enucleation will be indicated (Zimmerman V).

#### **Etiology**

**OCULAR CHANGES IN MALARIA.**—Blatt (VI) has



made extensive studies of eye complications in a locality where malaria is endemic. That these complications are purely of malarial origin appears certain because they supervene during or just after an acute paroxysm when the blood is notably altered. One result of the acute blood change is the clogging of the lumina of the retinal vessels and damage to the intima. Practically every portion of the eyeball and immediate adnexa may be involved, some naturally more than others. The primary injury of the vessels is responsible for the distinctly hemorrhagic tendency of these various lesions. An inflammatory factor is usually in evidence. Hemorrhage of the retina may be slight or may be sufficient to cause detachment. The optic nerve is relatively immune but the author has seen two cases of optic atrophy of malarial origin. He has seen no cases of cataract. Choroiditis and retinitis are of frequent occurrence. Corneal lesions seem to be of trophic and vascular origin. Ocular palsies are of course presumably of central origin, due to primary involvement of the nerve nuclei. The malarial nature of these complications is once more shown by the fact that quinine alone, and used intensively, has any power over these eye lesions.

**THE RELATIONSHIP BETWEEN DENTAL AND OCULAR DISEASE.** A. F. MacCallan, *The Dental Surgeon*, Oct. 13, 1928. It may be said that in a condition of systemic focal infection the eyes may be the first to suffer, that their resistance to disease breaks down. It is clear that in large number of eye patients examined there is a high percentage of dental infection and the development of eye troubles should cause an investigation of the teeth. MacCallan (VII) enumerates a great variety of ocular lesions which have suggested the presence of dental sepsis. These are as follows:

1. Blepharitis, Meibomian cysts and Conjunctivitis. Several case histories show that these troubles have promptly disappeared after extraction of infected teeth. As a rule these patients have had glasses prescribed for defects of refraction but wearing glasses had been without benefit.

2. Episleritis, Corneal Ulcer. Such cases are common in out-patient practice and the author gives several from his private clientele in which correction of the dental condition was followed by recovery.

3. Dacryocystitis. A case quoted of this lesion complicated by episleritis.

4. Iritis and Cyclitis. In these cases it is not claimed that dental extraction cured the patient for the conditions were too far advanced but they were of dental origin and might have been cured at an earlier period.

5. Lens Opacity and Cataract. Many patients show the coincidence of lens opacities and dental infection but no cures are claimed. If the teeth are extracted at the earliest moment cataract might be prevented.

6. Vitreous Opacities. One case mentioned of the coincidence of this condition with dental infection. Extraction of 9 teeth caused much improvement of the general health but naturally the eye condition was unaffected.

7. Changes in the Retina and Choroid. The author mentions cases of fundal disease due apparently to dental infection. No exact diagnosis was made for the lesions were not primary for the eye but symptomatic of some general state. The actual lesions were various as hyperemia of the macula, degeneration of the macula, central choroiditis, peripheral choroiditis, embolism of the central artery, venous thrombosis, hemorrhagic retinitis, etc. While some of these conditions may disappear after treatment of the mouth the author seems satisfied with arrest of the process and prevention of further mischief.

8. Orbital Cellulitis and suppuration of the Antrum,

may be of dental origin, and the treatment must be surgical.

9. Optic and Retrobulbar Neuritis, may rarely result from dental infection but it is a most unusual condition resulting from tooth infection.

Comments: It is generally believed that tooth abscesses frequently involve the uveal tract and the chorioid and retina, and an early X-ray of the teeth confirming the presence of the abscesses followed by the removal of the infected teeth is followed by very rapid clearing up of the eye trouble, especially of the anterior eye infections. The chorioidal and retinal conditions are much slower and generally leave a very damaged fundus with great loss of vision. These infections usually involve the vulnerable macular region.

#### Lens and Cataract

**NONOPERATIVE TREATMENT OF CATARACT.** Ellis (VIII) first refers to the original work of A. E. Davis in this field. Davis made his reports in 1922 and again in 1924 before the International Medical Congress in which he related 72 cases of cataract patients with a total of 131 cataracts in all but 7 per cent of whom he had secured some degree of improvement through the hypodermic injection of lens antigen. Some of these patients were cured. According to more recent reports it is claimed that Dr. Davis now recommends his method only or chiefly in incipient senile cataract. The author's experience goes back several years and he has tested the Davis method on 27 patients in the Bellevue and N. Y. Eye and Ear Infirmary services. There was no selection of cases and all ordinary clinical types of cataract were represented. Before the trial he conferred with Dr. Davis and placed his patients on a regimen which included potassium iodide 10 cc. thrice daily. The intracutaneous dose of 1 minim of injection was used to test the general behavior to the antigen, the first regular dose was 0.5 cm. followed the next day by 1 cm. then increasing daily by 1 cm to a limit of 10 cc. although in certain cases this was increased, once as high as 18 cm. Doses daily except Sunday. In 14 of the 27 cases the cataract progressed despite treatment while in 13 of the course was stationary although it does not appear that this apparent arrest could be credited to the treatment. In no case was there the least evidence that absorption of the cataract had occurred. During the trial the author also studied a number of control cases in which the lens treatment was not used and the result tended to show that the method was barren of results. At that period the author probably was unaware that Dr. Davis had narrowed his indications to incipient senile cataract.

**RONTGEN RADIUM INJURY TO THE HUMAN LENS.**—The lesions are not due to the direct action of the rays on the lens but rather that they depend indirectly on a disturbance in the nutrition of the lens. Meesmann is apparently the first to place on record the fact that radium treatment of affections of the eyelids can give rise to very similar lesions and reports a case to this effect. It then occurred to him to follow up some of the numerous cases of lupus in the region of the eye which have been treated at the radiation department of the dermatological clinic of the Berlin University for the past 32 years. He found notes of 36 cases which could be followed up over a very varying interval and of these only 2 presented lesions of the lens. In neither of these was the Finsen the sole treatment administered for one of the two positives had been treated by both rontgen and Finsen while the other had received every therapeutic form of irradiation.

**RONTGEN RAY CATARACT.**—That exposure to rontgen radiation can affect the lens has been known since 1905 and the first patient to develop this lesion was recorded

in 1908. Since this period cases have occasionally been reported and it has been understood that such cases belong to a large family of exogenous cases which begin with glass blowers' cataract, include similar lesions from the Linsen quartz lamp, electrical cataract and so on. Rohrschneider in his article makes no attempt to collect and analyze cases and merely reports a personal experience with a patient, a young shoemaker, who had never been exposed occupationally, and who gave no background for an exogenous or other cataract until it was learned that 5 years before he had taken a course of roentgen irradiation for a nasopharyngeal growth. The author discusses the great variety of the beginning alterations in the lens-droplets, streaks, a delicate clouding, etc., with a marked tendency to involve the posterior pole of the lens. Further data on this subject are supplied in the article by Meesmann, which is also abstracted.

**LOSS OF VITREOUS IN CATARACT EXTRACTIONS.**—Ellett makes a rough classification into small, moderate and large losses. A small loss amounts to a few drops; a moderate loss would fill the anterior chamber—say 10 drops of a fluid of the vitreous consistency. Anything above this would be a large loss. The loss may occur at any stage of the operation but is most common after delivery of the lens, especially if it is removed in its capsule. However loss at this juncture does very little harm. On the other hand in trying to expel the lens the loss of vitreous may be large and disastrous.

Why disastrous? First there is danger of infection and of opacities; of astigmatism from gaping of the wound and subsequent slow healing. Iridocyclitis and glaucoma are among the sequelae. In seeking to understand the pathogenesis there is no one factor which stands out singly, but one should regard it as an accident always liable to occur. Every considerable operator must have sometimes seen the entire content of the eye follow the knife blade as it is retracted from the wound. It may occur in any case and at any stage. At the other extreme there is only a single bead of vitreous which subsides of itself with removal of pressure. Between these extremes there are all gradations and it may be said that none of them are desirable. As regards frequency the author has a record of 600 cataract operations, in 7.6 per cent of which there was loss of vitreous. Of the 52 patients there were but three cases of excessive loss, 34 having small and 15 moderate loss. Parker in a very large material had 10 per cent but in his last 300 cases only 4 per cent. Dunphy in large material recently analyzed found 8.3 per cent with 6 cases of total loss of vision and 52 in which the average was 20/56. Small loss of vitreous in the author's case meant 10 per cent of serious impairment of vision, showing that the word "small" may convey a wrong impression. In the moderate group there was damage to vision in 20 per cent called failure. In the three cases of large loss two eyes had to be enucleated. Astigmatism was in evidence in all degrees although less marked in the small loss group.

That loss of vitreous is not more serious is due to the fact that in many cases the aqueous compensates for it.

**THE ROLE OF THE LENS CAPSULE IN THE COMPLICATIONS OF CATARACT OPERATION.**—Knapp has private records of 200 successful capsulotomy operations which were all combined with extraction of senile cataract and were done before the end of 1926. In this material secondary operations for after-cataract were necessary in 26 or about 13 per cent. In the great majority either the blunt (Kalt) forceps or the toothed forceps were used. In these 163 cases where there was a large enough opening in the capsule secondary operation was necessary in 14. Five of these were associated with peripheral cystotomy which was done to facilitate extraction. Further

analysis of this material is omitted for lack of space.

The most important complication was glaucoma and in this series of 200 cases glaucoma developed in 6. This complication is most dangerous and difficult to treat; it is due to various forms of adhesion and the author speaks of the risk in operating on small hypermetropic eyes for cataract, because the incision must be scleral. In other eyes faulty corneal section may be responsible. For the glaucoma following this form of operation iridectomy with division of adhesions gives mostly only temporary relief. The prognosis after sclerotomy and cyclodialysis is not favorable. The best resource is prevention by proper technique of corneal incision and capsulotomy. If some way could be devised to secure better visibility the prognosis should improve.

### Glaucoma

**SOME MODERN PREPARATIONS USED IN THE TREATMENT OF GLAUCOMA.**—Gifford discusses in succession (1) adrenalin and glaucosan; (2) amin-gl aucosan or histamin; (3) hypertonic solutions; (4) tyramin; (5) calcium; (6) barium; (7) ergotamin; (9) pituitrin.

He then sums up as follows: while reports on many of these remedies are meagre, some are well worth following up in further investigation. As for danger adrenalin and glaucosan may set up acute glaucoma, especially if the eye is already inflamed while histamin has caused troublesome inflammation and chemosis. In regard to value adrenalin plus miotics is of considerable value in simple glaucoma, for it will enable us to delay and perhaps do without operation. Any method of making the blood hypertonic as by intravenous injection of 30 per cent saline may reduce the intraocular tension until an operation can be performed. The internal use of calcium and the hypodermic injection of ergotamin are harmless apparently and may be tested when operation seems contraindicated for the time. Further reports from the use of histamin, tyramin, barium and pituitrin should be watched with interest. The mode of action of this group of medications is still obscure and when this is learned we shall probably know the nature of glaucoma itself.

**GLAUCOSAN.**—Nonay has treated with glaucosan 8 cases of simple glaucoma and 3 of secondary glaucoma. The technic used was that recommended by Hamburger, unmodified. In the simple form the tension was reduced, and some of the cases had been refractory to miotics. In the secondary form all depends on the case. In one patient the remedy was responsible for breaking up synechiae, after which the tension fell. In absolute glaucoma the results have been negative throughout. In the positive cases the duration of the lowered tension was from half a day to 10 days. In certain cases the tension in the opposite untreated eye was also lowered. Glaucosan has a varied action. Thus by stimulating the sympathetic it contracts the uveal vessels and forces some of the blood out of the eyeball. It has marked mydriatic powers, breaking down synechiae as stated above. But we must not think of it as a substitute for operation. It may make it possible to defer an operation although in this respect it is not superior to the miotics. The best to be said of it is that it may prepare for operation—that is, it increases the operability and perhaps makes an inoperable case operable. *It must always be used with caution* and not at all in a patient with but one eye.

**ATTACK OF ACUTE GLAUCOMA OF BOTH EYES FOLLOWING USE OF GLAUCOSAN.**—Böhm, Jr., having failed to relieve a chronic glaucoma by the use of miotics applied glaucosan (levo-glaucosan) to both eyes which was followed by an acute attack with almost total loss



of vision. After trying histamin or amin-glaucon to bring down the tension for 5 days without benefit he was forced to perform iridectomy but by reason of the delay failed to improve the right eye, reduced from  $\frac{1}{2}$  normal to finger perception. The left eye, originally  $\frac{3}{5}$  recovered only up to  $\frac{1}{10}$ . As result of this experience Böhm will now use glaucosan only when operation is out of the question, will never use it in both eyes at the same time and will never delay in performing iridectomy.

A comment on this article by Hamburger in the same journal, cxxi, No. 1, takes Böhm severely to task because he did not make use of preventive measures at the time of treatment. In 1927 the author wrote on the prevention of acute glaucoma during glaucosan treatment recommending either before or immediately after the appearance of acute glaucoma the use of intravenous saline, venesection (after symptoms appear) and histamin given at the same time as glaucosan instillation. He also quotes Gifford who uses preventive eserin.

### Sympathetic Ophthalmia

**DIPHTHERIA ANTITOXIN IN LARGE DOSES FOR SYMPATHETIC OPHTHALMIA.**—Heckel reports four cases of which 3 were in children. The opposite sound eye had in all cases been severely injured with enucleation indicated and this operation was carried out in 3, including the adult case. So-called sympathetic ophthalmia then developed in the sound eye. The author objects to this old term and divides his cases into two of the posterior type or sympathetic neuroretinitis and two of the anterior type—anterior uveitis with occlusion of the pupillary space. The first patient of the series was the adult, a woman of 28. It was decided to give her the foreign protein treatment without much emphasis on the particular form, but for reasons not disclosed the author gave her 5 consecutive doses of 3,000 units each of antitoxin. Vision which had been badly compromised became normal and has so remained. The second case presented as low as 5/200 vision; and when at its worst the treatment included 20,000 units daily for 4 days, vision improving to 20/200. Before this period the patient received salvarsan and bichlorid, while afterwards the bichlorid was continued. As the Wassermann had been negative throughout these drugs were not given for any possible syphilitic factor. The third patient, a child of 6 with uveitis, received 5,000 antitoxin units daily for 10 days and was able to attend school and study, the exact vision being omitted in the report. The fourth patient, a child with enucleation refused, also with anterior uveitis, received 20,000 units daily for 7 days. Vision at present is only 6/200, while the unenucleated injured eye has only perception of light. All cases appear to be at a standstill. The author has no theories to offer nor comments to make.

**Comments:**—There is so little that can be accomplished with any of the present methods of treatment of this condition that the above treatment is worthy of our consideration. Surely no harm can be done and we should urge its use, in all of our cases.

### Conjunctiva (Trachoma)

**THE ETIOLOGY OF TRACHOMA.** H. Noguchi, *Jour. of Experimental Medicine*, July 1, 1928, Vol. 48, No. 1, Supplement 2. Noguchi gives a preliminary account of experiments on the transmission of trachoma from American Indians of the Southwest to apes and monkeys. The transmitted disease he calls granular conjunctivitis and not trachoma, although the two are apparently identical. The agent of transmission and presumable exciting cause of the disease is a bacillus termed by him the *bacterium granulosis*. He was able to make pure

cultures of it, but we do not find in this paper any detailed account of it. A number of other microorganisms were also found in the trachomatous eyes of the Indians, some well known and others not and these also were cultured and used in experiments, but none was able to produce more than a transitory conjunctivitis. Some of the earlier attempts to inoculate the disease seems to have been negative in result and mere conveyance into the conjunctival sac is not enough for apparently subconjunctival inoculation is requisite. The bacillus is difficult to find, being few in number and staining poorly, but it may be recognized not only in the secretions but in tissues themselves. The first successful inoculations were made in Rhesus monkeys but at a later period successes were also obtained in chimpanzees and the disease was then conveyed from monkey to ape and from ape to monkey. It was passed through four monkeys in a series and the disease was in every respect identical with human trachoma including the scarring. In some of the more recent experiments the trachomatous tissues were actually implanted from eye to eye, without any attempt to make use of cultures or crude secretions.

In one positive result described in which as usual the first inoculation was made in one eye only, the other eye became infected spontaneously. In experiment also the second eye could be infected from the first.

Histological studies showed a complete parallelism between human trachoma and the inoculated animal disease. Noguchi has little to say of the Prowacek bodies which he studied about 1910 as possibly containing the exciting cause of the disease. He records the absence of any such formations, at least in some of the infected animals.

**Comments:**—It is deeply to be regretted that the sudden death of Noguchi will undoubtedly delay for a long time the finishing of this work.

This work has, I believe, brought us closer to the finding of the cause of trachoma.

Just how much a knowledge of the cause of trachoma will help in the treatment of this disease, we are unable to say.

**SOME NEWER VIEWS OF TRACHOMA.**—Birsch-Hirschfeld takes issue with recently expressed views of Elschnig and of Peters. He does not believe that a granular conjunctivitis which heals without scarring is at all equivalent to trachoma; nor does he believe either that there is every gradation between a simple conjunctivitis and trachoma. Were this the case there could be no disease to call trachoma and the name would have to be dropped. He believes that there are two basic affections, the benign from first to last and the malignant. Eventually any case must be placed under one or the other head.

Several articles published during 1928 emphasize the association of trachoma with the lymphatic or the exudative diathesis. The child most disposed to develop trachoma is the one with adenoids, hypertrophied tonsils, granular pharyngitis, and rhinitis. And the more pronounced these stigmata the more prone they are to contract the disease. According to one author 80 per cent of children with trachoma showed the exudative diathesis. Lowered alkaline index of the lacrimal secretion is also said to predispose. Many hundreds of cases of artificial trachoma in troops to escape military duty came to light in the last war, soldiers having deliberately inoculated the eyes with virus from others with trachoma; this is a document to the contagious nature of the disease. Trachoma sometimes appears to follow the irritation of the eye with dust, and recently workmen, notably masons, have put in claims for compensation for

occupational injury, giving trachoma a new forensic importance.

**RONTGEN THERAPY OF TRACHOMA.**—Lipowitz & Salzmann are associated with the Eye Clinic and Radiologic Department of the University of Smolensk. Incited by the good results published by others they tested the treatment in 44 cases of the disease. Treatments were given at intervals of 2 to 3 weeks. The eyelids were kept closed. Three sessions at each period, 5 to 6 X. Work conditions 1 to 2½ milliamperes, 8 to 9 Wehnelt. No filter. In every case the trachomatous process improved. After a year 9 patients were seen to have been completely cured. Even after the second treatment a biopsy of a bit of inflamed lid showed a marked diminution of the inflammatory irritant cells with a notable development of connective tissue.

**TREATMENT OF RETROBULAR NEURITIS WITH THE COCAIN ADRENALIN NASAL TAMPONADE.**—Mylius relates very briefly 14 cases of retrobulbar neuritis treated with the technic devised by Herrenschild. The majority of these cases were symptomatic of multiple sclerosis and the origin of the others was quite unknown although the examination of the nasal chambers and sinuses showed plainly that the eye lesions could not have been due to intranasal disease nor is the fact that the treatment benefits these patients to be used as an argument that the disease is of intranasal origin. The first step is to introduce for a few minutes only a pledget soaked in 4 per cent cocaine and when this is removed there is inserted in its place an ordinary gauze strip tampon soaked in a 1-1000 stock solution of adrenalin which is allowed to remain for a full half hour. The author makes not the least effort to analyze his cases and show the percentage of improvement but a study in detail shows that while the majority showed no improvement and only stationary or progressive course, a minority—seem to have benefited in a striking degree. Spontaneous remissions are especially likely to occur in the multiple sclerosis type and so the author counsels reservation of judgment.

**ATTEMPTS TO INFLUENCE THE COURSE OF TABIC OPTIC ATROPHY.**—R. Lederer. *Zeitschr. f. Augenheilkunde*, 1928, lxi p. 50. Lederer relates very briefly five cases of optic atrophy in locomotor ataxia subjects who were on full antisyphilitic treatment plus fever producing agents and non-specific protein of various kinds. All five were treated with a substance known as phloethan which is not described and is probably a fever-producing protein or at least a protein of some sort. Other remedies were mentioned as nucleinate of soda, the malaria inoculation and the usual antisyphilitics. Study of the five cases seems to show that in two the eye symptoms were arrested. Much patience is necessary and the patients seem to have been followed up over years. Spontaneous remissions may occur and confuse the practitioner who will ascribe them to the treatment. The point insisted on by the author is that we must abandon the past fatalism and by taking cases early in the history and treating them intensively and with all remedies give the patient a chance to retain his vision as long as possible. The author has hopes that some form of non-specific protein will be found to possess superiority over others but whether this will be typhoid vaccine, diphtheria antitoxin or what not, no one can have any idea.

**TREATMENT OF TABIC OPTIC ATROPHY WITH SUBOC-CIPITAL INSUFFLATION OF AIR.**—Horn and Kogerer did this work at the psychiatric and neurological clinic of the University of Vienna on four patients with locomotor ataxia, who were periodically examined at Lindner's

eye clinic, although the findings are given very sparsely. This resource has been tested in the clinic since 1922, although always in combination with anti-syphilitics, fever producing substances, and non-specific proteins. At first the air was injected into the lumbar cord, but the reaction was found to be more bland if injected high up. Of the four patients two were unimproved in the long run, although one had improved at first and his relapse could be attributed to an intercurrent experience. The other two seem to have derived considerable improvement in vision and not a mere status quo, which could have been ascribed to a spontaneous remission. The reports on vision, as stated, are meagre. All of these patients received intravenous salvarsan and one of the two who benefited also received a course of malaria treatment. The amount of air injected never exceeded 30 cm. given daily for a number of days (8 in one case). The rationale of the improvement is not clear. Much toxic spinal fluid is carried off with the punctures and the air may set up a local reaction (temperature rises only to 38 or so at most).

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#### Health Work Should Be Counted a Necessity

How to combat the "can't afford" attitude in regard to children's teeth and other health corrections among families who have such luxuries as automobiles, radios and victrolas, was discussed by Miss Georgie B. Collins, Assistant Editor of *Health Films* of the Eastman Teaching Films, speaking before a joint session of the American Child Health Association and the American Public Health Association.

"Health work should be counted among the necessities in every family," Miss Collins declared. "Teachers in the public schools can do more to forward this attitude than any other agent. The mass of teachers in service have not acquired in their training a knowledge of child hygiene but the nurse, physician or health education worker should supply teachers with facts concerning common physical defects, their effect upon growth and health and the advantages which are obtained through correction."

"In Malden, Massachusetts, a manufacturing city of something over fifty thousand with an elementary school population of about six thousand, very few children in the public schools would have dentistry done except for the stimulation brought to them by activities in school. At the end of one year's survey which brought out conditions and showed how they could be remedied, nineteen hundred more children than the previous year had clean teeth. Three hundred and sixty more children had dentistry completed."

"The Board of Health runs a dental clinic with one dentist working four mornings a week. He does cleaning, filling of temporary teeth and extraction. There is no other clinic work. Thus these increases were attained by every day educational work and show what can be done even with small clinical aid."



# A Review of the Progress in Operative Surgery During 1928

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## Surgery of the Bones and Joints. Orthopedic Procedures.

The difficulty of dealing with cases of delayed union in fractures is well known. Mock takes up the discussion of this matter and states that in a series of cases he found that pure periosteal transplants, containing no cortical substance whatever, have brought about union of the fragments in cases of delayed union, in the repair of ununited fractures and in bridging large bone defects. The periosteum seems to play the principal role in osteogenesis. The best results are obtained the more completely the shaft at the site of the fracture is covered by the periosteal transplant. Usually the ends of the fragments are completely denuded of periosteum. With a considerable bony defect to be bridged, the osteoperiosteal graft is probably superior to the periosteal transplant.

An article by Albee on the subject of arthroplasty of the knee joint presents certain original features, notably a wedge-shaped modelling of the joint which secures satisfactory lateral stability and yet affords adequate mobility. 10 cases are reported in which these refinements of the orthopedic procedure are illustrated. The prognosis for arthroplasty of the knee to relieve bony ankylosis has distinctly improved owing to refinements of technique and a better understanding of the indications and selection of cases.

There has been much written in recent years on the surgical treatment of arthritic and rheumatic conditions. Max Page states that while no direct surgery should be attempted while any infectious process is present, yet much can be done in the way of splinting to avoid contractures and preserve functioning in chronic arthritic cases. There are three surgical methods available in dealing with polyarthritis: manipulation under anesthesia, graduated exercises and open operations. In osteoarthritis when infection has subsided, the kind of operation will depend upon the nature of the case, i.e., arthrotomy, arthroplasty or operations aiming at ankylosis.

Hofman describes a new operation for recurring dislocation of the shoulder joint which consists mainly of suspending the humerus from the acromion by a loop of metallic wire. Success was obtained in one case. For the same condition, Oudard also has a new mode of operating. His operation includes: First stage—a reversed L-incision running from acromio-clavicular space to the delto-pectoral interspace parallel with the clavicle and 1 cm. below it. The short leg of the L follows the delto-pectoral interspace. The deltoid is resected along the same line 1 cm. below the clavicle. The coracoid process is divided in the second stage of the operation. In the third stage, rotation is diminished a little to relax the subscapularis and this latter is resected 3 cm. from its insertion, the resection involving the capsule. The subscapularis and capsule are then shortened by 3 cm. and reinforced. The lowered fragment of the coracoid is raised and fixed in the prolongation of the remaining portion of the process, overlapping it by 1 cm. Finally the cut edges of the deltoid and the skin are approximated. 9 cases have been successfully treated by this method.

"Tennis Elbow" is a condition which has been observed more in England than here. Mills states that in this condition full pronation with complete wrist and finger flexion causes limitation of extension of the elbow. By manipulating the elbow into complete extension with the hand and forearm in the condition alluded to while at the same time pressing over the external condyle, Mills was able to relieve the symptoms in all patients so treated.

In regard to lesions of the spine, Hawk treats mild scoliosis by developing the musculature of the trunk. The object sought is to develop the muscles on the side of the spinal convexity so that greater strength and muscle tonicity on this side of chest and abdomen will increase the downward pull of the shoulder girdle and gradually bring the spine into permanent alignment. Steele assumes that wedging of the fifth lumbar vertebra is responsible for the lumbar curving in scoliosis. He finds that after detorsion of the vertebra, it has still a tendency to slip back and he has devised a method of stabilizing it in its new position. This consists of a wedge of bone inserted between the articular facets of the fifth lumbar vertebra and the sacrum, then keeping the patient in a plaster cast until fusion takes place. The bone block insertion keeps the fifth lumbar stabilized.

The extension of local anesthesia to operations on the spinal column forms the subject of a report by Wieden. In only 8 of 26 laminectomies done under local anesthesia was it necessary to add inhalation anesthesia. There was recovery in 72 per cent of all cases operated, and in 86 percent of extramedullary tumors.

In reducing fractures, Taylor thinks that no sufficient attention is given to the action of the soft parts in the vicinity. Often, after careful alignment of the fragments and the placing of a plaster cast, muscle spasm again pulls the fragments out of alignment. In treating a fracture-dislocation of the shoulder, Taylor claims that traction in abduction and outward rotation, putting the capsule on the stretch, in early treatment, will reduce anterior and inward dislocation of the humeral head, and that hyperabduction, carefully guided by a series of x-ray studies, may entirely overcome non-alignment in the most disabling condition. In this case, the soft parts are used as tractors to overcome dislocation muscle spasm and non-alignment of fragments.

In fracture cases in which osteosynthesis is indicated, instead of wire or other contention means, Jensen and Dahl-Iverson use a fibrous graft obtained from a graft of fascia lata. The fascia lata strip is wrapped around the fractured bone in the form of a sleeve. Excellent results are reported in 3 cases of fractured forearm.

In executing osteoplastic operations on the hip-joint, Calve uses the trans-trochanteric approach over the external iliac fossa. He makes a T-incision the longitudinal part of the T starting from the base of the external face of the great trochanter and ending at the iliac crest at the union of the anterior third with the posterior two-thirds. Two shorter incisions, one anterior and one posterior, follow the curved line which outlines the iliac crest. Extra-articular osteosynthesis of the hip is then proceeded with in the usual way. The operation can be done for congenital dislocations, for arthrodoses, pseu-

darthroses and coxalgias. Speed reports the end results in 100 cases of hip-flexion adduction. The Campbell modification of the Soutter technic is used and recommended for cases with more than 20 degrees of flexion. The iliac crest, including the antero-superior iliac spine, is chiselled off and transplanted distally on the ilium with its attached adductors and flexors.

For fractures of the femur, Clavelin describes a suspension apparatus which takes the ischium on the sound side as the point of counter traction. The apparatus is a modification of that first described by Picot in 1925, who formed an articulated cradle for treating fractures of the femur in this way. Clavelin has improved the apparatus by the addition of two lateral crutches which help to prevent swinging of the pelvis. 5 cases in which the apparatus was used with good results are cited.

Hildebrand reports a new case of extirpation of the femur with Sauerbruch's basculation plastic operation. The case was one of femoral sarcoma in a girl in which the malignant process did not extend beyond the lower third of the femur. A Sauerbruch plastic operation was done on what remained of the femur. The lower three-fourths of the femur was extirpated, the leg bone amputated at the union of the middle and lower thirds, and a segment of the fibula removed which was implanted in the medullary canal of the basculated tibia and in the medullary canal of the femur. There was a good recovery and the operation was successful but the girl fell some time later and examination showed recurrence of the thigh sarcoma.

Albee reviews the end-results of bone pegging in 36 cases of un-united fractures of the neck of the femur. An autogenous bone peg was used. Also the results in 44 cases in which his arthroplastic reconstructive operation was employed. In 90 percent of the bone peg operations the results were excellent or good and in 75 percent of the reconstructive operations. The time during which the cases were under operation varied from a few months to 15 years.

A method of dealing with fracture deformities of the femur is reported by Orr. The method aims to secure correct alignment and full length by fixed traction in plaster; this may necessitate refracturing of the femur in a closed or open operation in cases where there is much shortening.

According to Deubner, who bases his opinion upon the results in 138 cases of femur fracture, the best and quickest correction is secured by direct traction on the bone. He also thinks that the tongs are superior to adhesive plaster extension and to the Steinmann nail method of extension.

The operations usually employed to correct habitual dislocation of the patella fail to give muscular power to the patella. Hofmeister has devised a method of transplanting the tendon of the gracilis muscle (freed for a length of from 8 to 10 cm.) into the inner border of the patella. This operation has been tried clinically on a number of patients with excellent results. The free end of the tendon is pulled beneath the sartorius muscle and fixed under tension in a hole which is drilled in the medial border of the patella. The semitendinosos or the semimembraneous tendon may also be used for the purpose.

As a conservative method of treating meniscus lesions, Rocher removes only torn segments of cartilage doing what he terms a subtotal meniscectomy when the entire meniscus is not damaged beyond hope of recovery. A meniscopexy, he thinks, suffices when the meniscus is subluxated but otherwise normal or fairly so.

Henderson calls attention to the frequency of bucket-

handle fractures of the internal semilunar cartilage of the knee-joint. In 232 cases of internal semilunar fractures, 70 were of the bucket-handle variety. The treatment is manipulative and operative.

Bosch-Arana describes a personal method of cinematization of the stump in upper limb amputations. He creates an antibrachial and brachial motor by using the biceps muscle.

Floresco believes that in osteo-articular tuberculosis there are many indications for the periarthritic sympathectomy of Leriche, especially if cases such as he reports are carefully chosen.

#### Progress in Surgery of Vessels and Nerves.

Pemberton remarks that but little attention has been given in the United States to the operation of embolectomy. The literature shows that it has been performed 98 times. Of 45 operations done between 1911 and 1922, only 13 were successful; since 1922, there have been 18 operations followed by complete success. Pemberton has performed the operation 4 times, there being successful results in two.

Bailey says that a large proportion of cases of thrombophlebitis of the sinus cavernous are traceable to infection of the upper lip and nasal integument which reach the sinus most frequently by the angular vein. Bailey describes a technic for ligating this vein and reports 3 cases of serious carbuncle of the upper lip in which the operation was performed and resulted satisfactorily. Anschutz reports two cases of thrombopenia operated by splenectomy. In both recovery, was perfect and has been maintained more than 4 years. The operation may be expected to result in recovery in about 60 percent of the cases. Operation is the only known method that gives the patient a chance of life.

Moore and Dennis recommend that blood transfusions be made subcutaneously and that this method is specially applicable to children. The subcutaneous method has all the advantages and none of the dangers of intravenous injection. Typing and matching of bloods are unnecessary. The authors have been employing this method successfully since 1920.

In the surgical treatment of intraspinal cord tumors, Petit-Dutaille has improved the technique by opening the dura without disturbing the arachnoid, by preventative hemostasis of the vascular pedicle of the tumor and by suppression of extra-dural hematoma and medullary shock. These improvements have reduced the mortality from 45 percent (which it was in 1919) to 8 percent for extra-dural and 7.3 percent for intra-dural tumors.

Melzner reviews 76 cases of epilepsy operatively treated by various techniques. These were mostly traumatic cases. 35 of the cases have been followed for from 1 to 10 years following operation (25 more than 5 years) and all are improved. The operative mortality was 31 percent. 20 percent of the patients operated have had new attacks of epilepsy. Operations in cases of epilepsy consecutive to cerebral tumors have given bad results.

Telson describes a technic for transplanting the gluteus maximus for paralyzed gluteus medius with report of a successful case. For the gastric crises of tabes, van Bogaert and Verbrugge say that a physiologic operation for relief must be directed toward the posterior sensory root and the sympathetic fibers of the anterior root of the vagus. The combined section of the two roots and the resection of the rami answers the requirements and constitute the new operation called by these authors Neuromisectomy. It is performed through an extra-medullary route. This operation is indicated in all vagosympathetic cases.



In regard to his operation of periarterial-sympathectomy, Leriche discusses his personal experience based on 400 operations on the sympathetic system mostly for the relief of severe pain. Leriche says that preference should be given to sectioning the communicating branches (ramisection) especially when dealing with long standing chronic lesions. In all other cases, periarterial sympathectomy should be resorted to not only because of its great effectiveness but because of its simpler execution. Every sympathetic operation (glanglionectomy, ramisection, section of a sympathetic trunk) is always followed by an active vaso-dilatation, more or less lasting.

Leriche in a further article states that all traumata involve the vasomotor mechanism. After every injury even if there is no wound nor fracture, the excitation of the peripheral nerve endings produces reflexly a disturbance of the vasomotor control which is more or less lasting and which is generally manifested by an active vaso-dilatation. In the presence of an active vasodilation there are skin disturbances, muscular atrophy, bone absorption, rarefaction and decalcification. After periarterial sympathectomy or ramisection, an acute transitory decalcification of the subjacent bones is frequently noted; but the operation soon conquers the local hyperemic conditions.

#### Surgical Diagnosis.

Since the introduction of the tetraiodophenolphthalein method of obtaining radiographic evidence of the condition of the gall-bladder by Graham and his associates a large literature has sprung up on the subject. Eustermann, of the Mayo Clinic, says that cholecystography promises to be as extensively used in the diagnosis of cholecystitis as the roentgen ray in the diagnosis of conditions of the upper digestive tract. Eustermann thinks, however, that there are limitations. Diagnostic accuracy as high as 98 per cent has been claimed for this method, but the clinical history and careful physical examination enables the clinician to make a correct diagnosis in 90 per cent of these cases. Basing diagnosis on the cholecystogram alone may show abnormalities not in themselves sufficient to justify removal of the gall-bladder, but there would be a tendency to remove the gall-bladder unnecessarily, if the cholecystogram alone was the diagnostic criterion. The cholecystogram is only of real value in clinically indefinite cases where the symptoms are mild. "False negatives" ran as high as 25 to 30 per cent in a large series of cholecystograms. This procedure is more a test of functions than of disease. Following the employment of this method of diagnosis Dick and Wallace report clinical cases of jaundice and death. Experiments on animals, according to these authors, proved destructive effects on the pancreas and liver, especially when there was biliary obstruction. Boardman thinks that factors other than the anatomical condition of the gall-bladder play a part in determining the results of cholecystography. Some of these factors vary day by day and thus give contradictory results on repetition of the test. Boardman thinks that cholecystographic findings must be interpreted in terms of the functional activity of the biliary system rather than in terms of the pathology of the gall-bladder; although a great aid, careful correlation of the cholecystographic findings with other clinical findings is absolutely necessary. Bollinger expresses the opinion that the sodium thiosulphate test for renal functioning should be combined with the phenolphthalein test.

Cole writes upon simultaneous cholecystography and determination of liver functioning by the use of phenol-tetra-iodophthalein. Cole has found injections of large

quantities of the dye to be of much value in the differential diagnosis of obstructive jaundice, due to malignant disease and that due to stones and inflammation, the differentiation depending upon the amount of dye retained.

The use of injections of iodized oil for diagnostic purposes, especially for evidence in regard to spinal tumors, is extending. Scaltizer says that the introduction of ascending lipiodol into the subarachnoid space of the spinal cord facilitates the diagnosis of narrowing processes in the fluid spaces due to tumors. The ascending method is added lipiodol injections in cases in which no definite results have been obtained with the latter, or in which neurologic diagnosis is uncertain. Robineau used subarachnoid injections of lipiodol to define the limits of intramedullary tumors. The lipiodol test is subordinate to clinical examination but clears up many doubtful points in diagnosis. It reveals the position of tumors very accurately and facilitates the early diagnosis. Since the discovery of lipiodol exploration, perimedullary tumors are operated upon ten times more frequently than formerly and the operative mortality has been greatly decreased. Bregman and Szpilman, however, have reported 5 cases in which iodized oil used for the diagnosis of spinal cord lesions gave misleading pictures.

#### Anesthesia.

Reviewing the literature of the use of local anesthesia in major surgery, Layton believes that it is now established that the employment of local anesthesia in this way is beyond the experimental stage and that it is an accepted procedure. It is indicated when operations have to be performed upon patients with organic heart lesions, with acute pulmonary infections or chronic affections like tuberculosis, in profound shock, in marked acute sepsis, in patients of advanced age and in fact in all conditions in which a general anesthetic would be dangerous. Procaine ( $\frac{1}{2}$  to 2 per cent) with adrenaline is the best agent. There is no rivalry between local and general anesthesia. Postoperative complications are fewer with local anesthesia. The field of major surgery has been extended by the use of local anesthesia, as patients whose condition would not permit the use of a general anesthetic can now be surgically treated.

Berry reports 165 consecutive perineal operations in which a single caudal epidural injection of 20 cc. of 3% procaine hydro-chloride solution was used as an anesthetic agent. Success, as measured by the complete abolition of pain, was obtained in 84 per cent. In 16 per cent, some additional anesthetic was required. This series included 140 cases of perineal prostatectomy for benign hypertrophy. The complete success in 3 cases each of radical operation for carcinoma and of a radical excision of the seminal tract for tuberculosis shows the splendid possibilities of this simple method of anesthesia. Attention is called to the great degree of relaxation of the perineal structures following epidural injections.

Young also considers epidural anesthesia far safer than ether anesthesia in prostatic surgery, more satisfactory than local and less dangerous than spinal anesthesia. Epidural anesthesia is quite satisfactory in prostatic surgery and gastrointestinal disturbances are avoided. It is particularly valuable in the very aged, in cases of high blood pressure, in the presence of cardiac lesions and in renal impairment.

From a study of 400 cases of spinal anesthesia in operations for acute ilious, Duval finds that this method of anesthesia brought about evacuation of the intestines in 68 per cent of the cases of dynamic, paralytic

and spasmodic ileus but in only 16 per cent of mechanical ileus. In postoperative ileu, spinal anesthesia, Duval believes, should be the method of choice if no peritonitis is present.

During the past year, Frazier has used colonic ether anesthesia in 17 cases in which a major craniotomy or laminectomy was performed. The results were very satisfactory, psychic phenomena and danger of pneumonia were absent. Colonic anesthesia is a method of inducing narcosis in which there is no sense of suffocation, no period of excitement, no irritation, no harmful influence upon pulse or blood pressure.

During and following abdominal and pelvic operations, Fischer supplemented the general anesthetic and employed carbon dioxide inhalations by which he claims that the circulatory complications and dangers of the inhalation anesthetic used are reduced.

### Miscellaneous.

Several articles appear in recent literature regarding the use of the electrome or endotherm knife in surgery. Wyeth writes regarding the value of endothermy in the removal of neoplasms. By endothermy we may desiccate or coagulate or excise tissue by the so-called endotherm "knife" which is not a knife in the ordinary sense but an electric perforating needle. In the mouth and breast and in cavities which may be made accessible, such as the bladder or larynx, the cavity may be opened by the ordinary scalpel or with the endotherm knife and a neoplasm destroyed by one of the endothermy processes. Anderson says that in the treatment of breast cancers surgical diathermy seals the lymphatics, gives better hemostasis, sterilizes the wound, causes less pain and shock, gives clearer and more satisfactory healing and is apt to be followed by less recurrence.

In skin-grafting, Gohbandt thinks that better results and a more reliable "take" is obtained in Thiersch grafts when these are cut from 2 to 3 mm. thick instead of the thinner grafts ordinarily used.

For the examination of pathologic specimens, Terry recommends that thick sections be cut from a small block of excised tissue and stained superficially on one side with a solution of polychrome methylene blue and mounted moist. Terry says that if such a prepared specimen be transilluminated it may be examined under all powers of the microscope. This is a much more rapid method than the method of examination of frozen sections.

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### The Management of Traumatic Rupture of the Kidney

1. Pyelographic study should be done in all but slight cases of kidney injury. This should be done when danger or hemorrhage or infection has passed.
2. More complete follow-up should be carried out in these cases than has been the custom in the past, especially where mechanical defects are demonstrated, and suitable treatment instituted, when indicated.
3. Expectant treatment is the one of choice excepting where hemorrhage is rapidly progressive or severe enough to demand surgery.
4. Infection, following extravasation, or hematoma, may require drainage at a later stage.
5. Accessory pouches or sacks may later become infected or increase tendency to calculi. Lavage treatment may be necessary, or plastic operation with resection when feasible.
6. Accessory pouch following injury is to be differentiated from solitary cyst or hemorrhagic cyst of the kidney with which it may be confused.
7. The power of repair and recuperation of the kidney is, indeed, remarkable.—Augustus Harris, M.D., in *Long Island Medical Journal*.



# A Review of Some of the More Important Advances in Obstetrics and Gynecology During 1928

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(Concluded from the January, 1928, issue)

## The Treatment of Asphyxia Neonatorum by the Injection of Alpha-Lobeline into the Umbilical Vein

Wilson *Am. Jour. Obs. and Gyn.*, Vol. XVI, No. 3, Sept. 1928. There is sufficient evidence experimentally that Alpha-Lobeline is a respiratory stimulant. Its action on the blood pressure, heart muscle, and pulse is not marked, but it has been shown to have a favorable action on the circulation, even though it can hardly be considered a heart stimulant. This drug has been used by many as respiratory stimulant but the results have been conflicting. This can be explained because of two principal reasons: one, it has been injected intramuscularly or subcutaneously in cases when only the intravenous route could be employed, and the other, a lack of proper indications.

The writer, taking into consideration the cause of these failures, employed the drug intravenously through the umbilical vein in 35 cases and concluded the following in his preliminary report.

1. It is recommended that alpha-lobeline be injected into the umbilical vein for the treatment of asphyxia neonatorum, the dose being from 1/40 to 1/20 of a grain.

2. The umbilical vein is easy to identify and enter, but in case of doubt all three vessels may be injected to insure the presence of the drug in the vein. The vein is always available for injection until respirations commence.

3. The clinical results have so far been encouraging; the initial respiration occurring from seven to twenty seconds after injection, and the action of the drug lasting from ten to twenty minutes.

## Acid-Base Balance in Pregnancy

Gaebler and Rosene (*Am. Jour. Obs. and Gyn.*, No. 6, June, 1928.)—Pregnancy is considered to be a normal function, hence, in the absence of complications, all changes which take place are to be considered physiologic. However, pregnancy is accompanied by extensive variations within the normal.

Disease, on the other hand, produces many changes which are the result of disturbed function.

The writers have been interested in the study of the acid-base equilibrium of the mother during gestation. The adopted methods of chemical investigations were employed in their study.

Maternal blood was obtained at different times before delivery, and also, one from ten to seventeen days postpartum. Controls were used.

As a result of this investigation, the foregoing conclusions were derived:

1. During pregnancy, the reaction of the plasma is slightly more alkaline than normal, although plasma bicarbonate is lower than in the non-pregnant.
2. Early during the puerperium, the bicarbonate values increased, while the reaction of the plasma becomes slightly more acid, both values returning to the normal range for non-pregnant individuals.
3. The plasma Ph values found during pregnancy in

this series of cases are not as alkaline as those of Marrack and Boone, but qualitatively, the results are similar.

4. Increased acid production during pregnancy is not entirely excluded by the results. It occurs in non-pregnant individuals without alteration of the normal Ph values, and might occur in pregnancy without altering the slightly more alkaline reaction produced by increased ventilation.

5. But since the latter factor alone is known to produce the results observed, low carbon dioxide tension, low plasma bicarbonate, and high Ph, the low plasma bicarbonate cannot be regarded as evidence for increased acid production during pregnancy.

## Toxemia of Pregnancy

Observation Based on Routine Investigation of the Kidney in the Toxemia of Pregnancy. Kahn (*Am. Jour. Obs. & Gyn.*) XVI No. 2, Aug., 1928: The theory of deranged kidney function from the investigations of many observers, seems to play a great role among the etiological factors causing toxemia of pregnancy. The author quotes Prutz, who, in a collection of 360 autopsies after eclampsia, found renal involvement in 98 per cent. This was confirmed by Pollack of Vienna who had the same average percentage in a series of 139 cases.

The author, after a study of fifty-two cases of toxemia complicating pregnancy, using a routine investigation of the urinary tract, found:

1. Forty showed turbidity of the urine in catheterized specimens from one or both kidneys.
2. Microscopical examination disclosed the presence of pus, epithelia, bacteria, and hyaline, or granular casts.
3. The right side was affected in twenty-two cases, the left in sixteen, and both in eight cases.
4. The colon bacillus predominated, and was found present in twenty-four cases.

These cases were treated according to the type of renal lesion present. As a result of this study, the author concludes the following:

1. The kidney of pregnancy appears to be an important etiologic factor in the toxemias of pregnancy. This kidney is usually one that has been previously affected directly, or secondarily involved from extraneous foci infection.
2. A careful routine study of kidneys in pregnancy will offer a solution of the problem of toxemia in many cases.
3. Routine catheterization of both ureters should be done in all cases of pregnancy manifesting an early toxemia, or hypertension without symptoms of toxemia.
4. Many patients referred to the obstetrician for the instrumental termination of pregnancy can be safely carried to term, if a definite renal or ureteral involvement is found, and adequately treated.

## CAPILLARY PRESSURE IN THE TOXEMIA OF PREGNANCY

Mufson (*Am. Jour. Obs. & Gyn.*) Vol. XV, No. 6, June, 1928. Numerous investigators have made studies

on the behavior of the capillaries during pregnancy, in the hope of finding an aid in maternal and fetal prognosis. Most of these investigations have been limited to the study of capillary morphology. Investigators believe that there is present a capillary stasis, varying with the severity of the toxemia. They further believe that the local capillary disturbances precede the clinically apparent lesions in the liver, kidney, brain, and other organs.

With these observations in mind, the clinician can terminate a toxic pregnancy before the more dangerous stage of convulsions and hemorrhage is reached. The writer, from a series of cases studied, found no consistently typical picture of morphology in the hypertensive cases. In the hypertensive toxemia cases with a low capillary blood pressure, the most favorable maternal and fetal prognosis was obtained. The presence of a high capillary pressure in the hypertensive toxemias of pregnancy, is an index for an unfavorable prognosis for mother and fetus. The intravenous injection of epson salt has been found to parallel that of the brachial pressure, excepting that the return to the original reading was less prompt.

#### THE PHENOLTETRACHLORPHTHALEIN TEST OF LIVER FUNCTION IN THE LATE TOXEMIAS OF PREGNANCY

Berman (*Am. Jour. Obs. and Gyn.*, Vol. XVI, No. 3, Sept., 1928.) Because of the difficulty clinically in differentiating between the nephritic and pre-eclamptic types of toxemia, the phenoltetrachlorphthalein test for liver function was tried with the hope of seeking a new source of assistance for this problem. The method employed is essentially that described by Rosenthal. Five tenths milligram of the dye per Kilo, of body weight is injected intravenously. Specimens of blood are collected preferably from the other arm at fifteen minute, one hour, and two hour intervals. The blood serum is alkalized with 5 per cent NaOH and the resulting colors are compared with standards in a comparator.

The Rosenthal is reported to have been used in 118 cases of toxemia. In 34 cases varying amounts of dye retention was found, but in the majority the amount of retention was not large. The most significant observation is the presence of 10 eclamptics with retention of the dye and 10 with none, 3 dying in each group; and in striking similarity of symptoms—hypertension and albuminuria. The presence or absence of the dye seemed to have no particular effect nor caused any fundamental differences. From this series, the writer concludes the following:

1. The test did not help to differentiate the nephritic and preeclamptic toxemia.
2. The majority of chronic nephritics had no retention.
3. Uncomplicated subsequent pregnancies have occurred in each group. The percentage of success was much greater in the group with retention.
4. The test has no practical value in the management of these cases. The only index of treatment is the clinical condition of the patient.

#### Spinal Anaesthesia in Obstetrics

The art of Anaesthesia has made extensive progress during the past decade. Twenty years ago, spinal and local anaesthesia were rarely used, but today they are very popular.

With the introduction of anaesthetic agents into the subarachnoid space of the lumbar spine, caudal anaesthesia can be produced. With the use of gliadin which prevents the dissemination of anaesthesia agents in the spinal fluid, anaesthesia can be controlled. As a consequence anaesthesia can be produced limited to the peri-

neum, symphysis, sacrum and the inner sides of the thighs. The cervix, vagina, perineum, vulva, and sphincters of the anus and bladder are completely anaesthetized while the sensation of the uterus is unimpaired. The cervix can be dilated without pain. Pitkin and McCormick (*Surgery, Gynecology and Obstetrics*, Nov., 1928), taking advantage of these facts have employed this method in obstetrics. In their paper *Controllable Anaesthesia in Obstetrics*, the authors give an excellent description of the technique employed and report satisfactory results in 89 cases of instrumental deliveries, versions, breech cases and cases of prolonged labor.

They advocate this method of anaesthesia for the following reasons:

1. The technique is very simple since no greater knowledge is required than that of doing an ordinary diagnostic lumbar puncture.
2. A limited spinal anaesthesia may be administered by the operator himself, thereby eliminating the necessity of an anaesthetist or an assistant.
3. The anaesthesia is quickly secured in from 1 to 3 min. after injection and satisfactory and complete anaesthesia occurs in 99 per cent of the cases.
4. Mothers suffer no shock or drop in blood pressure. There is no danger of suffocation, cyanosis, strangulation, or swallowing of the tongue as with inhalation anaesthesia.
5. Asphyxiation or cyanosis of the child is rare.
6. Anaesthetic may be confined to the perineum or carried to any desired height on the body surface.
7. It eliminates post-anaesthetic complications.
8. It does not affect the heart, kidneys or liver. Post-operative lung and intestinal complications are reduced to a minimum.
9. Dehydration is not produced, a distinct advantage in eclampsia and toxemia where water is so essential.
10. It assures cooperation of the patient throughout the delivery.
11. It may be given to patients with bronchitis, influenza, cardiacs, nephritics, alcoholics, addicts, and hypertension cases.
12. Shock is eliminated.
13. Vomiting is rare. Distention or ileus does not occur. Sphincters are relaxed and peristalsis is stimulated.
14. There is no lowering of resistance. Nourishment can be taken immediately after delivery.
15. Postpartum hemorrhages are less frequent.
16. Cervix and perineum are protected from trauma and lacerations since relaxation and elasticity of these parts is greater when anaesthetized.
17. Bladder spontaneously empties itself, hence cystocele is less common.
18. Cervix readily dilates and is dilatable, hence vaginal caesareans may be eliminated.
19. Mortality and morbidity of obstetrical cases are reduced. The child is offered greatest protection.

#### Ovarian Irradiation

The employment of radium and the Roentgen rays for the relief of malignant and non-malignant uterine bleeding has become so universal that the remote effects of these therapeutic agents upon the patient and her progeny is a very important subject for our consideration. That many of these patients become pregnant following irradiation, where the "dose" has not been too large, is now an established fact. Just what happens to the pregnancy once it has been begun is not so well known, but from the evidence at hand it would seem that pregnancy and labor does, at least in a certain number of cases, proceed in a normal manner.

D. P. Murphy in his paper "Ovarion Irradiation: Its Effect on the Health of the Children" (*Surgery, Gynecology and Obstetrics*, Aug., 1928), gives a very comprehensive review of the literature on this subject with some interesting statistical data that he has collected. The subject was studied for two reasons: first, radium and x-ray are being used more frequently each year, for the relief of abnormal uterine bleeding; and secondly many of these irradiated patients have subsequently become pregnant and because a few of the resulting children presented certain abnormalities the idea that the maternal irradiation was the cause of such deformities has been spread about. From a practical standpoint the subsequent health of the child is by far the most important phase of this proposition and the solution of this problem, is the Author's particular interest.

This paper may be further summarized by quoting the author's general recapitulation and the conclusions. His general summary is as follows:

1. The literature bearing upon Ovarion irradiation as it may affect the health of subsequent offspring, both animal and human, has been carefully reviewed.

2. Frequent serious developmental disturbances have been observed in animal and human offspring, when the pregnant animal or human, or the fertilized egg has been directly irradiated. These disturbances are severe in nature, and in human beings present themselves most frequently in the form of arrested cerebral development, characterized by the condition known as microcephaly.

3. Abnormalities of development and structure have been observed in the young of animals that were irradiated prior to conception or fertilization.

4. Children born of women who have been irradiated in the pelvic region prior to conception also present abnormalities of development and disturbances of health, early death and other abnormal conditions.

5. These abnormal conditions are not especially frequent, nor are they uniform in character.

His conclusions are the following:

1. Irradiation of pregnant animals or human beings is a procedure extremely dangerous to the health of the offspring concerned (61.3 per cent defective), and in the case of human beings ought not to be undertaken unless such existing pregnancies are to be terminated artificially prior to the period of viability of the child.

2. As yet, it cannot be definitely stated that pre-conception maternal pelvic radium or x-ray irradiation is or is not prejudicial to the health of subsequent children.

### X-Rays in Ovarian Dysfunction

The treatment of amenorrhea by x-rays is not a new procedure but a very important one at the present time. A warning has been sounded against its use particularly in those patients likely to become pregnant. Is there danger of affecting the offspring? In the small "dosage" used in the cases under discussion, there is not the slightest danger. There is now sufficient data accumulated to positively substantiate this statement.

Ira Kaplan reports the use of x-rays in 38 cases of ovarian dysfunction (mostly amenorrhea) with excellent results. (*American Journal of Obstetrics and Gynecology*, May, 1928.) Just how the x-ray works on the ovarian mechanism is not clear and the author does not attempt to explain.

His conclusions are as follows:—

1. Amenorrhea and sterility may be successfully treated with the X-ray.

2. When properly treated no harm ensues to the patient or to her offspring.

3. Abnormal children have not been born in our series of radiated cases.

### OBSERVATIONS ON THE BIOCHEMICAL CHANGES IN THE BLOOD FOLLOWING RADIUM THERAPY

Matthews and Mazzola (*Am. Jour. Obs. and Gyn.*, Vol. XVI, No. 1, July, 1928)—Many patients following exposure to radium show severe symptoms of radium sickness, manifested by nausea and vomiting. Others show very little or no discomfort. In view of the fact that this reaction occurs in a number of irradiated patients, chemical observations were made on the blood and urine with the hope of establishing some unknown relationship between the reaction and chemical changes in the blood. For this reason, the writers studied the blood and urine in 100 cases that were irradiated at the Long Island College Hospital of Brooklyn. From this small series of 100 cases they formulated the following deductions:

1. Forty-one per cent of our cases showed a mild reaction which might have been due in part to the pre-operative atropine and morphine and the anesthetic.

2. Blood urea was elevated slightly in both benign and malignant conditions following radium irradiation.

3. No definite relationship could be established between the increase in the blood urea and the reaction.

4. The CO<sub>2</sub> combining power of the blood was not affected by irradiation.

5. The chemical and laboratory findings did not indicate any evidence of renal impairment following irradiation.

### Affections of the Cervix

C. F. Fluhmann in his paper "Epidermidalization of the Cervix Uteri and Its Relation to Malignancy," (*American Journal of Obstetrics and Gynecology*, Vol. XV., Jan., 1928), gives a most excellent explanation of a very common condition in the cervix which has hitherto been designated by a variety of names, none of which have been entirely satisfactory. In his summary, the author gives a thumb-nail sketch of his ideas on the subject as they are as follows:

By epidermidalization is meant a process by which the normal cylindrical epithelium of the cervix is replaced by a stratified squamous epithelium. Five theories have been suggested to account for the exact mechanism involved in this change. It was found to occur in fifty-nine instances of chronic cervicitis from a series of 1,195 specimens of the cervix and in twenty-nine of 100 cervical mucous polypi. It was also noted in newborn cervixes, and there are many references in literature to the finding of squamous epithelium in the endometrium.

At times the process may lead to the formation of atypical epithelial overgrowths, which may be termed "epidermidalization." Careful study of serial sections and repeated biopsies may be necessary to differentiate these findings from an early carcinoma. In rare instances, malignancy can be excluded, but certain features are present which may be considered as "precancerous." It is not certain that these really represent transitions from a benign to a malignant growth, and there is reason to believe that most of them would probably prove harmless.

### Sterility

The problem of sterility still remains, for the most part, unsolved except in the hands of a few expert observers. There has accumulated during the past 15 years a vast literature on this subject but there has been only a few noteworthy contributions to the subject. These, it would seem, are the following: post coital ex-



amination (Hühner's test); a better comprehension of metabolic factors; the Rubin test of tubal patency; and lastly a better understanding of the many causes of sterility.

S. R. Meaker in his paper "A Working Classification of the Causes of Sterility" (*Jour. Amer. Med. Assoc.*, Vol. 90, Jan. 14, 1928), discusses the problem of sterility in a most comprehensive way. His classification of the causes of sterility is most excellent. Furthermore, his methods of procedure and tabulations of results are the most usable that we know about. Unless some such scheme is adopted no progress will be made, for, says Meaker, "the better the mechanism of fertility and the factors deranging that mechanism are appreciated, the greater will be the chances of success in the management of these cases at present, and the likelihood of arriving ultimately at a larger knowledge of this important problem."

### The Surgical Audit

An annual audit should be made of every service in every hospital. A "surgical survey" is as necessary for the good of the service as the bed in which the patient lies, for without a check-up we can never know how good or how poor our results are.

Polak and Tollefson in their paper, "What Can We Learn from a Study of Mortalities?" (*Amer. Jour. Obs. and Gyn.*, Oct., 1928), analyzed the work of the Gynecological Service of the Long Island College Hospital for the last five years. This was done primarily for the purpose of discovering the defects of the service as well as a check-up on various methods of procedure.

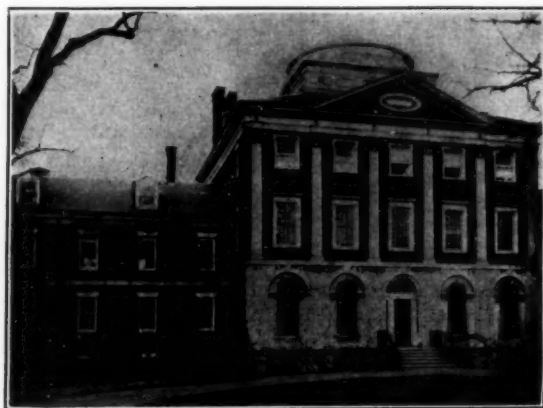
Gynecological surgery, like general surgery, may be divided into emergency and elective groups. The emergency group yielding by far the smallest number of cases—e. g. tragic ectopics, uterine and other visceral ruptures, torsions, and acute suppurative conditions requiring immediate drainage. The elective group is the group taken up in detail.

The minimum requirements, say the Authors, for all elective operative cases on the Gynecological Service at the Long Island Hospital are the following:

1. A complete history and general physical examination.
2. A leucocyte count of between seven and ten thousand.
3. A polymorphonuclear percentage of from 65 to 80.
4. A hemoglobin of at least 60 per cent.
5. A sedimentation time of ninety minutes or more.
6. A normal urinalysis, and an adequate kidney function.
7. A temperature of 98.6 F. for at least forty-eight hours before operation.
8. A systolic blood pressure between 110 and 150.
9. A negative Wassermann, and finally, that all elective pre-operatives have rest in bed in the hospital for a period of at least forty-eight hours, during which time the intake of fluids, water, milk, etc., must be at least two and a half quarts per diem, while the usual sugar intake of the individual must at least be quadrupled.

When all these requirements have been fulfilled the patient will have the "widest margin of surgical safety" that is humanly possible for her to have. This, coupled with good judgment and operative technique (carefulness, judgment, conservatism, speed, etc.) gives the patient further assurance of good surgery.

Our failures, say the Authors, have been in direct ratio to the accuracy with which we carried out our established requirements of pre-operative preparation.



The Oldest Hospital in America

The Pennsylvania Hospital, Philadelphia, Pa., which boasts that distinction. The charter was granted to the institution in 1751, by George II of England. One of the sights of the hospital is a big gate which has remained closed since 1842, when the Marquis de Lafayette passed through it.

### The Small-Town Doctor

The Farmer has Deserted the Small-Town Doctor, not the Doctor the Small Town.—The article in the August issue of the journal from the National Grange relative to the country doctor situation is interesting, but does not place the blame where it belongs. The farmer is to blame. He has ceased to adequately support the country doctor, and the basic reason for this is ease of transportation.

I started practicing nearly thirty years ago, in the horse-and-buggy age. In those days it ordinarily took two hours to go twelve miles. Nowadays the farmer in that community can drive fifty miles in the same length of time—and he does. In that community today the local doctors get nothing but emergency cases and confinement and other work among people who are too poor to get away. The confinements all go out of town (if able), much of the surgery goes out without even consulting local men. Whereas, the town used to support four or five doctors it is now able to support only two, and they are hard-up. The people are still there, the sickness is still there, but it is on wheels traveling to the big towns.

The farmer has deserted the small-town doctor, not the doctor the small town and the farmer.

It is not specialization except in this respect that the farmer will get into his car and go to a specialist himself without even consulting the home doctor and an awful lot of them do. —Paul R. Howard, *Illinois M. J.*

### Undulant Fever

There is no specific remedy for this fever, although many forms of treatment have been tried. Vaccines, serums from convalescent patients, autogenous serums, and many drugs have been tried without results.

Quinn, however, as used by Ochsner in the treatment of malaria is perhaps the treatment of choice. General measures as suitable for typhoid fever should be instituted.

It is of the utmost economic importance that the etiological factor of undulant fever be determined. The raw-milk industry is on trial until it is determined whether the strain of *Brucella abortus* that infects a large percentage of our milk cows is pathogenic to human beings. It is a strange coincidence that all of the cases that have developed in southern California had been placed on a concentrated raw milk diet for various reasons. This question of pathogenicity will probably be answered in the near future as soon as experimental work now being done at Hooper Research Foundation is completed.

Any case of long-continued fever with sweats, enlarged spleen and leukopenia, in which a proved diagnosis cannot be made, should be suspected as an abortus infection. *Brucella* infections among cattle and hogs are exceedingly common, yet those cases of undulant fever in man that cannot be distinguished serologically from the *Brucella* infection in cattle and hogs are so few as to be looked upon as medical curiosities.—Ruddock, *Calif. & W. Med.* Oct., 1928.



# Physical Therapeutics and Radiotherapy During 1928

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(Concluded from page 21, January, 1929 issue)

**MALIGNANT TUMORS OF THE TESTICLE.** (C. C. Higgins. *Annals of Surgery*, Feb. 1928).—The author reports 23 cases of this affection of which 7 represent ordinary malignancy while 8 were examples of teratoma or embryoma. In 8 other cases the type was not specified (in 4 of them no operation was done). The roentgen treatment is used under several circumstances. It has been used alone; after orchidectomy and before orchidectomy. In after-treatment it should be applied to the inguinal regions and also to the loins and left supraclavicular region where metastases are most likely to appear. In advanced cases where the inguinal glands may be involved orchidectomy is contraindicated the roentgen treatment may be used alone. The author is in favor of using any other method which promises any assistance, including local radium and Coley's serum. Under the circumstances it is hardly possible to quote statistics of x-ray treatment. By making use of all resources the author has seen some arrest of the primary disease with reduction in size of metastases. However the prognosis even with these aids is always grave. It seems evident that the destructive action of the rays promises no startling results in this type of malignancy, although from the helplessness of the surgeon in so many cases he is glad of any assistance from irradiation.

**METASTASES OF MALIGNANT TUMOR OF THE TESTICLE AFTER RONTGEN THERAPY.** (L. Zazni *Radiologie Medicale* June 1928).—The author reports 6 cases of malignancy of the testicle with metastases despite roentgen treatment. In four of the six the metastasis did not appear until after 2 years suggesting that some arrest had resulted. The post-operative roentgen treatment lasted from a week to a year. Several of the patients were in poor health, perhaps from cachexia, and the roentgen treatment was followed by severe symptoms, although evidently this was not ordinary roentgen sickness. Treatment was maintained despite the symptoms and eventually the latter disappeared; as a result of the irradiation all of the patients put on weight—from 5 to 37 kilos (11 to 80 lbs.). Of the original 6 cases 4 patients died from generalisation within the first 2 years, one lasted 5 years after the operation and the sixth still lives, free from disease 7 years from the operation; he has had no treatment for the past 4 years. The gain in weight already mentioned was accompanied by improvement in the blood picture. Although the report is not put forward as favorable it may be quoted as such, considering the poor prognosis in this affection. In the series of 6 cases a number of separate pathological conditions were comprised.

## Radium (With X-Rays)

**END-RESULTS OF RADIUM REMOVAL OF CARCINOMA OF THE BLADDER.** (B. S. Barringer, *J. A. M. A.* 90: 352-355 Feb. 4, 1928).—Barringer reports on the end-results of "Radium Removal of Carcinoma of the Bladder" as follows:

"Twenty patients with papillary carcinoma, fifteen of whom or 75% were cancer free for as long as observed, eleven having remained so for more than five years. There were 51 patients with infiltrating carcinoma, 18 of whom or 35% were cancer free, 12 having remained so more than 5 years.

Radium in all forms has been used. Beginning in

1915 blindly and very experimentally I applied radium by means of tubes left in the bladder, then more accurately in cystoscopic applicators and in bare glass seeds implanted in the tumor by the cystoscope. In 1919 I applied radium seeds through the open bladder for the first time. Not until the fall of 1925 did I first begin to use gold seeds. In none of these reported cases have I used gold seeds. With the advent of gold seeds, the effectiveness of radium in controlling the bladder growths has decidedly increased and future results ought to improve.

In the 94 suprapubic implantations of radium, there was a mortality of slightly over 3%. When this is compared with the mortality of between 10 and 20% resulting from the operative removal of carcinoma of the bladder, it is realized that even if radium removal were not more effective than operative removal, one would by using the former, spare a goodly number of lives.

There are several points in the performance of the suprapubic implantation of radium that merit comment: 1—The contents of the bladder, often badly infected, should not be spilled in the open wound. The best way to prevent this is to empty the bladder by means of an aspirating device, padding the wound well and removing any soiled pads after the bladder is empty. 2—Cautery removal of protruding parts of the tumor accomplishes two things: bleeding is minimized and infection is controlled. This last factor is valuable when the tumor is of the sloughy, badly infected type. The cautery used should be the quick heating, electric type. In addition, the base of the tumor should be exposed so that radium implantation can be accurately done. 3—If the tumor is at all large if bleeding has been an important symptom, or if the bladder is badly infected, I object to sewing up the bladder without drainage. Instead a rubber drainage tube is placed in the bladder and removed when the bleeding has stopped or the infection is controlled, generally in several days. The bladder is not sewed to the abdominal wound, but a silkworm stitch is placed in the lower part of the bladder, so that it can be lifted up in case of need. 4—Gold seeds of radium of a strength of about 2 mc. are implanted 1.5 cm apart throughout the base of growth. This the method of choice, and rarely is any other form of radium used. 5—We have a large and growing series in which bladder cancers have been controlled by the cystoscopic application of radium. This should not be attempted by one not experienced in the use of radium, and if there is any reason to doubt that a tumor will be controlled, the suprapubic operation should be resorted to.

Gold seeds can cause just as much slough as the older glass seeds although they generally do not. This slough may take a long time to pass off, as it may become encrusted with phosphates. The gold seeds as a whole, cause a good deal less irritation than glass seeds, but if twenty or more are implanted in the base of the bladder, rectal irritation may be considerable, and may last several weeks. As opposed to this, the flexibility of radium and its use in bladder tumors, the low mortality of its suprapubic application and the possibility of many small tumors being controlled intravesically so far overbalance the disadvantages that today radium is the method of election in controlling bladder tumors.

**MALIGNANT DISEASE OF THE THYROID GLAND: A CLINICAL CONSIDERATION.** (John Pemberton, *Annals of Surgery*. March 1928 87:369-377).—If the carcinoma is not definitely encapsulated, total removal of the affected lobe is indicated. In all cases a rubber drainage tube is left in the cavity so that subsequently (12-48 hrs.) radium may be inserted directly into the wound. Later during convalescence further topographical application of Radium and Roentgen ray treatment are indicated. Additional courses of irradiation are advised, depending on the type and degree of malignancy. If the local growth cannot be removed at operation radium needles (10-20) may be buried about 1 cm. apart in the tumor by means of steel-alloy points containing 10 mg. of radium sulphate each (Bowling). Silk threads are attached to the needles so that the operative wound may be closed and the needles removed aseptically within 12-24 hrs. Further irradiation is given during the convalescent period and subsequent courses of treatment every two to three months. Probably in no other malignant disease are radium and Roentgen ray so valuable as in treatment of the thyroid. Cures by irradiation in such cases can hardly be expected but reducing the size of the tumor and extending the patient's life by from 2-4 yrs. is not uncommon. Since 1918 operation in conjunction with irradiation has been employed in the Mayo Clinic as outlined here, in most of the cases of carcinoma of the thyroid gland coming to operation.

**OPERATIVE AND RADIOLOGICAL TREATMENT OF MALIGNANT TUMORS OF THE MOUTH.** (Elis Berven, *Acta Radiol. Abstract Amer. J. of Roentg.* 20:197-1928).—323 cases treated at Radiumhemmet during the past two decades, the cases including cancer of the tongue, sublingual region, mandible, cheek and tonsils, as well as sarcoma of the tongue and tonsils. Tumors of the alveolar processes of the upper jaw and hard palate have not been included. The treatment was not exclusively with radium and roentgen rays, but since 1921 electro-endothemy, among other things, was used extensively. The principles for the treatment have, in the main, been the same as those outlined by Forssell. The material for each localization is divided into four different groups; Group A comprises cases operable on admission and only radiologically treated; Group B included cases receiving combined surgical and radiological treatment and subsequent operation or immediate postoperative radiological treatment to prevent recurrences; Group D. includes inoperable cases treated only by radiotherapy. Each of these four groups is divided into subdivisions according to the presence or absence of glandular metastases. Subdivision 1 including cases showing no demonstrable metastases at operation or admission, and 11, cases with definite clinical evidence of glandular metastasis. This elaborate subdivision has been made because of the great variation in prognosis as well as treatment.

Detailed account is given of the origin and development of the glandular metastases as well as their bearing on the prognosis. From the point of view of technique of the treatment, the author divided his cases into 3 different stage. For Stage 1 comprising cases without clinically demonstrable metastases radiological treatment is advised. It is shown that the results of radical surgical dissection of the glandular regions in these early cases are no better than those obtained by radiological treatment alone. For Stage 11 comprising cases with already developed but definitely operable metastases preoperative treatment is recommended with radium at a distance, followed by block dissection of the glandular regions on both sides of the neck if necessary with subsequent postoperative radiological treatment.

For state 111 cases on the borderline between operability and inoperability, the author advises against attempting surgical interference and recommends radiological treatment only. The risk of incomplete operations of malignant tumors is illustrated by cases from the literature and from the present series. Test excisions should be made only by the method of electro-endothemy and in immediate connection with the radiological treatment.

The results of the treatment are summarized in numerous tables.

**RELATION BETWEEN STRUCTURE AND PROGNOSIS IN CERVICAL CARCINOMA UNDER RADIATION TREATMENT.** (Wm. P. Healy and Max Cutler, *A. J. Obst and Gyn.* July 1928—Vol XVI 15-27).—200 Cases unmistakable carcinoma of cervix treated in 1922 and 1923 whose present condition is known and from whom satisfactory tissue is available for microscope study. Special emphasis is placed on the fact that all the cases have been treated by radiation alone, the technic of which, with few exceptions has been fairly uniform as to type and amount.

The plan of treatment carried out has consisted in the application of radium in rather massive doses at the site of the primary lesion by means of buried emanation, vaginal applicators and intracervical and internal capsules. This has been combined with the use of x-rays. At the time the patients referred to in this paper were treated, low voltage x-rays were employed. The circumference of the pelvis was divided into 4 quadrants and 1 treatment was given to each quadrant, the tube being so placed as to be centered on the cervical lesion. This technic has been modified recently by the substitution of gold filtered seeds for the glass seeds and high voltage x-rays for low voltage.

**Summary and Conclusions:** The adult type of carcinoma of cervix (Grade 1) is markedly resistant to radiation; Anaplastic type (grade 111) is highly radiosensitive; the plexiform type (grade 11) occupied an intermediate position.

20-25% of carcinoma of cervix are histologically very cellular, malignant and anaplastic tumors and consequently are highly susceptible to radiation.

The results of this study confirm the biologic relationship between anaplasia and radiosensitivity and demonstrate the ability to cure advanced disease of the most malignant type by radiation in a high proportion of cases.

**RADIUM STATISTICS OF CARCINOMA OF THE CERVIX UTERI.** (George G. Ward and Lilian K. Farrar, *J. A. M. A.* 91:296-300—August 4, 1928).—Ward and Farrar in "Radium Statistics of Carcinoma of the Cervix Uteri" state: The technic of administration has been given previously and we will simply say that it is the radium salt that we use in tubes or in needles, or both together, and that the dosage varies from 2400 to 4200 mg. hrs. according to the involvement of the cervix and the adjacent tissues. The radium tube is anchored in the cervix and the needles are placed in the broad ligaments, in the uterosacral ligaments, and in the cancerous tissue in the vagina if it is involved. The vagina is distended with gauze to prevent irradiation of the rectum or bladder, and for the same reason a retention catheter is placed in the bladder to keep it empty during the time the radium is in situ. Care is taken to increase the patient's resistance before irradiation if necessary. A blood transfusion and rest for a few days is instituted before treatment if the patient is anemic, and after irradiation every patient is urged to be out of bed to allow the purulent discharge to drain out and to take a potassium permanganate douche once or twice

a day. When she leaves the hospital the patient is advised to be outdoors as much as possible and to endeavor to build up her general health. Each patient is requested to report once a month in the follow-up clinic. We attend this clinic in person, and one or the other of us palpates and inspects each cervix with its adjacent tissues.

Five yr. end-results from the use of radium in primary carcinoma of the cervix uteri.

Classes I, II, II, IV—Treated 134, Traced 126, Living 31.

Classes I, II limited to cervix—Treated 32, Traced 30, Living 17.

#### Per Cent Living of Cases.

Classes I, II, II, IV—Traced 24.6, Treated 23.1.

Classes I, II limited to cervix—Treated 53.1, Traced 56.7.

**THERAPEUTIC VALUE OF IRRADIATION IN THE TREATMENT OF MAMMARY CANCER. SURVEY OF 5 YR. RESULTS IN 355 CASES TREATED AT MEMORIAL HOSPITAL, N. Y.** (Burton J. Lee, *Annals of Surgery* 88:26-47 July 1928).—Analysis with and without surgery—182 primary operable and 173 primary inoperable. Percent of follow up 97.2%.

**Radium Therapy.**—Clinical experience seems to indicate that the gamma rays of radium with their shorter wave lengths probably produce a different therapeutic effect upon tumor tissue than do x-rays. Aside from its use as an external agent, radium is available for interstitial irradiation, permitting more varied types of therapy. In the present pack the filtration is  $\frac{1}{2}$  mm. silver and 1 mm. brass being equivalent to 2 mm. brass. In treating breast lesions and axillary and supraclavicular disease the distance has been 6 cm. from the skin. Recently dosage raised from 9,000 to 12,000 mc. hrs. In average patient latter dose produces a well-marked erythema and occasional blistering. Out best results with the 6 cm. pack have been obtained by cross-firing on either side of a breast tumor with a full erythema dose or by repeated treatments of supraclavicular nodes and large metastasis of chest wall. Many satisfactory regressions in metastasis to bone especially in spine, have occurred in using the 6 cm. pack when the distance has been increased to 10 cm. and a dosage of 18,000 to 20,000 mc. hrs. used, still better results have been obtained. Out most striking regressions have occurred when both high voltage x-rays and radium pack have been employed over identical areas, an interval of only 2 to 3 days intervening between treatments.

**Glass Emanation tubes.**—one tube of 1 to 1.5 mc introduced into each cc of tumor tissue to be treated. A disadvantage arose in connection with use of bare tubes from the inflammatory reaction induced by beta rays which glass does not filter out. Frequently this inflammation was marked, the patient suffering considerable discomfort and pain; Nevertheless, some of our best results in the primary operable cases treated by radiation have been obtained by the use of bare tubes, in small localized carcinomas of breast.

**Platinum needles.**—the dose increased from 70 mc. hrs. per needle to 700 mc. hr. per needle for primary tumors and 500-600 mc. hrs. for treatment of metastases to axillary nodes.

#### Results in Primary Operable Patients:

Pre-operative Irradiation Surgery; Post-operative Irradiation—41 cases, 14 well and alive, 1 alive with recurrence, 1 dead, 24 dead of intercurrent disease (after 5 yrs. 2) % 5 yr. results 39.

Surgery and Post Operative Irradiation—76 cases, 26 well and alive, 49 dead, 1 lost track of—% 5 yr. results 35.

Irradiation—45 cases, 11 well and alive, dead of in-

ter-current disease after 5 yrs. 6, lost track of 5, dead 22—% 5 yrs. results 36.

Pre-operative irradiation Surgery—7 cases, 4 alive and well, 3 dead—% of 5 yr. results 57%.

Surgery, Irradiation for Recurrence—5 cases, 2 alive and well, 3 dead—% of 5 yrs. results 40%.

Surgery alone—1 case, 1 alive and well—% of 5 yrs. results 100%.

Irradiation 3 yrs. later Surgery—1 case, 1 alive and well—% of 5 yrs. results 100%.

Local Excision Irradiation—6 cases, 2 alive and well, 3 dead, 1 died of intercurrent disease after 5 yrs.—% of 5 yrs. results 50%.

**Results in Primary Operable cases treated by Radium and X-rays.**

Radium—11 cases, alive and well 5—% 60. Alive but recurrent 1, dead 4, dead of intercurrent disease 1.

X-rays—10-1-9; alive 1—% 11. Dead 8; lost track of 1.

Combined Radium and X-rays 24-9—15. Alive 5—37%. Dead 9, dead intercurrent disease 5, lost track of 5.

**Conclusions:** (1) treatment of carcinoma of breast by irradiation methods alone or combined with radical surgery gives a higher % of good 5 yrs. results than when radical surgery alone is employed. (2) post-operative irradiation has increased the length of life after operation and has yielded a higher % of satisfactory 5 yr. results than when radical surgery alone was employed. (3) Radium is a more effective agent than Roentgen rays in dealing with this disease (4) Convincing evidence of the efficacy of physical agents in dealing with mammary cancer is furnished; first clinically by marked diminution in size or complete disappearance of the tumor and 2nd by the gross and microscopical changes occurring in tumor tissue adequately irradiated. (5) treatment of primary inoperable cancer of the breast by radiation gives relief from pain, healing of superficial carcinomatous ulcers, improvement in general condition and prolongation of life.

**DESIGN OF A WELL-PROTECTED RADIUM PACK** (G. Faille, D. Sc., *Am. J. of Roentgenology and Radium Therapy* xx: 128-142 August 1928).—Dr. Faille describes in detail a design of a well-protected radium pack and gives the following table of Milligram hours required to produce threshold erythema for different skin distances:

#### Etiology and Treatment of Chronic Arthritis

The relatively high morbidity incidence of chronic arthritis, the progressive chronic course and the incapacitating nature of the disease make the economic aspect a very important one. Willard C. Stoner, Cleveland (*Journal A. M. A.*, Aug. 25, 1928), believes that the conception of the etiology indicates that there are two distinct types, the one infectious, the so-called hypertrophic form, and the other, the metabolic type, the so-called atrophic form. These forms are not always definitely distinct and one may fuse into the other. Etiologic treatment is largely limited to the infectious or toxic nature of the disease. Dietary measures have limited value. The results of careful management of these cases as described warrants the application of the measures mentioned as a routine. The treatment of these cases should not be left in the hands of the quacks and faddists. Institutional medicine should make an effort to standardize treatment which should be made intensive over a period of time, and continuous effort should be made to determine more definitely the cause.

#### Treatment of Tapeworm in a Child

To children, oleoresin of aspidium may be prescribed in doses of 0.5 grams per year of age, but not exceeding a maximum dose of 5 grams. The preparation should include saline catharsis for several days previous, light diet for the day before, and a liberal dose of magnesium sulphate (from 5 to 10 grams) and an evacuant enema the evening before the treatment.—*Jour., A. M. A.*, August 25, 1928, p. 584.



# Arterial Hypertension and Arteriosclerosis

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**Introduction:**—Hypertension and arteriosclerosis are inextricably connected with each other, forming a vicious circle of pathological states which later appear in the death certificates under the names of cerebral hemorrhage or thrombosis, heart disease or heart failure, myocarditis or angina pectoris, chronic nephritis or uremia, or senile diabetes with gangrene. The extent of these two influences may be realized by examining the record of deaths among physicians in any number of the *Jour. A.M.A.* In a recent number 31 out of 52 deaths were directly due to these causes. To a certain extent both of these conditions are normal and due to advancing age. A blood pressure of about 120 is normal at age 20, and about 160 is normal at age 70. The diastolic pressure also rises normally from about 70 to 75 at age 20, to about 90 to 100 at age 70.

Arteriosclerosis also normally appears with age, and almost everybody over 60 normally is arteriosclerotic as is shown in the arteries of the eyes and in the anterior tibial artery. It is now definitely recognized that arteriosclerosis is not the cause of hypertension but that the reverse is true and that hypertension is the great cause of arteriosclerosis. So that we have both a normal arteriosclerosis increasing with age, and an abnormal A. caused by hypertension. This hypertension in its turn is produced by nephritis and other organic diseases, resulting in an interaction between each other of these fundamentals making a vicious circle. For instance, taking nephritis as the starting point of the circle, we have nephritis causing hypertension, which in turn causes A. of the small arteries of the chief organs, especially of the kidneys, producing secondary nephritis, from which comes more hypertension, then more A. and so on until the final results of the vicious circle appear in the death certificates as noted before.

With this brief introduction, showing the continual interaction of hypertension and A. S. upon each other as age advances, I will go on to the consideration of the two chief forms of hypertension itself which we may classify as follows:

1. Essential Hypertension or Cardio-Vascular Disease.

2. Organic Hypertension from Nephritis, Cirrhosis of the Liver, Valvular Heart Disease, Hyperthyroidism, etc.

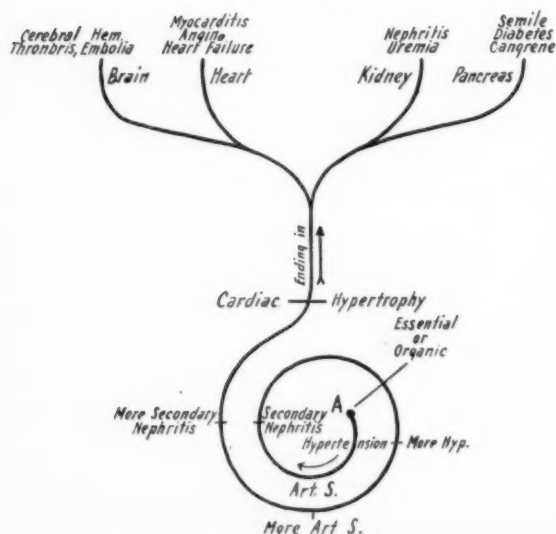
The first of these, essential hypertension, is a disease in itself and needs careful consideration. In the second, hypertension is only a symptom of some underlying disease, but in these cases we must also expect the added results which hypertension itself produces as a disease. It adds on all the evil results of essential hypertension so that a consideration of Ess. H. is absolutely fundamental for all conditions.

## Essential Hypertension

Essential hypertension is a disease of itself. It is due to chronic spasm of the smaller arterioles. In 76% of the cases heredity is a direct cause. Other causes are lead or other mineral poisons, intestinal auto-intoxication and endogenous toxemias from defective metabolism, all of which produce continuous irritation of the vasomotor centre. Gout and syphilis are also included as causes.

O'Hare, from a series of studies, has traced the different stages of development of an essential hypertension and has brought out many practical points. He finds that its beginnings appear in early youth. Vasomotor disturbances such as nosebleed without apparent cause, flushes and high color of the face from dilatation, and cold clammy hands, from constriction in boys, and profuse menstruation in girls, are seen. These symptoms are common from 10 to 15 years of age. Then there is a quiescent stage until 30 or 35 when fluctuating changes in pressure appear, especially in the over-ambitious brain workers, or busy business people. In these a normal 135 will be seen one day and 165 or 175 at the next visit. This period of fluctuation may last from 5 to 10 years and then comes a period of permanently higher than normal pressure. With this stage the abnormal development of Art. S. begins to be added on to the normal increase of age. From this point we have the continued hypertension going on hand-in-hand with the steady development of A. S., both normal and abnormal, which produces finally the various diseases of the death certificates. The first and chief action of this permanent hypertension is upon the heart itself. It throws more work upon the heart and a natural hypertrophy develops, while an increasing A.S. causes degeneration of the heart muscle. Myocarditis appears, weakening the heart and making still more hypertrophy necessary to compensate. If the heart remains the chief victim of these forces acute dilatation or angina pectoris will be the cause of death, but as A.S. is developing at the same time in other organs, some other ending may supervene. If the arteries of the brain are chiefly affected by the A.S. caused by the hypertension cerebral

DIAGRAM NO. 1



Vicious circle begins at A with Hypertension of either Essential or Organic origin. End results in Brain, Heart, etc., appear at top of figure.



hemorrhage or thrombosis may occur. Or in still another case secondary nephritis caused by the arteriosclerosis may develop, thus increasing hypertension, throwing more work on the heart and causing death from heart failure or uremia or angina pectoris. In still another way hypertension may cause A.S. of the arterioles of the pancreas and cause senile diabetes, which in itself produces more general A.S., thus making another vicious circle.

From the preceding remarks it will be seen that essential hypertension is a progressive disease which causes A.S. as a natural sequence, and anything of a secondary nature which adds to the hypertension also increases the A.S. Hence any treatment which keeps down the hypertension also keeps down the increase of A.S., with all its devastating effects, and lengthens life in proportion.

The consideration of the second form or organic hypertension, in which the hypertension is only a symptom, will be brief. Chronic inflammation of the kidney, Cirrhosis of the Liver, Chronic Valvular diseases of the heart, and certain endocrine conditions, as for example, hyperthyroidism, produce high blood pressure and the effect of this continuous hypertension will be the same as if it were from an essential hypertension; therefore it is necessary to remember, in making a prognosis, that any of the fatal endings of essential hypertension may occur as well as that of the basic disease itself.

### Diagnosis

Before attempting to make a diagnosis in blood pressure cases, several readings of both the systolic and diastolic pressures should be recorded. The urine should be examined for both albumen and sugar and the phenolphthalein test for deficiency of kidney function is absolutely necessary before a diagnosis of nephritis can be made. The heart should be carefully examined for valvular disease and hypertrophy. The past history of the patient should be carefully taken and special inquiries made as to any records of high blood pressure or its results in the parents. A broad diagnosis between essential and organic hypertension should first be made. If there are evidences in the parental or personal history of gout, rheumatism, syphilis or lead poisoning, or of extreme worry, or emotional shocks, they are probable causes of essential hypertension. And if to these is added the presence of continuously higher than normal diastolic pressures the diagnosis of essential hypertension may be made. If, on the other hand, there are evidences of same definite disease as nephritis or valvular heart disease accompanied by a diastolic pressure which is not continuously higher than normal, then organic hypertension of a particular kind is present, and essential hypertension may be excluded. Certain special conditions easily diagnose themselves. Aortic insufficiency shows a very high systolic and a very low diastolic pressure. Myocarditis varies according to its stage of development. At first it has a high systolic and a nearly normal diastolic. As it advances in its degenerative stage the systolic falls and the diastolic rises, making the pulse pressure less and thus diagnostic. A history of high pressure in the past with a low pulse pressure in the present usually means a well developed myocarditis, especially if evidences of A.S. are found in the eye fundus. A special point of diagnosis in cases of myocarditis between valvular heart disease and A.S. as a cause, is also found in the eye, absence or presence of arteriosclerotic changes therein deciding the diagnosis. When the only symp-

tom is high systolic with normal diastolic pressure, the diagnosis is intestinal toxemia. It is estimated that 75% of all blood pressures are from this cause and it is my belief that such a pressure may be superimposed upon any of the other basic pressures.

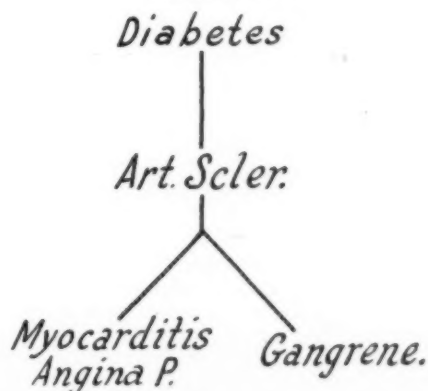
### Treatment

Since there is no cure for hypertension, the treatment depends entirely upon the therapeutic skill and ingenuity of the physician in charge. He may use one or more of the time-honored remedies or may invent some new way of relieving this progressively fatal condition.

Many of the older remedies do good. High frequency currents are especially good in relieving the spasm of the arterioles in essential hypertension. Digitalis is absolutely necessary in cardiac cases and steadies the pulse and reduces the pressure in almost all cases. Nitroglycerin, in emergencies, frequently averts cerebral hemorrhage, and if given directly after a hemorrhage limits the bleeding and consequently lessens the size of the blood clot, increasing the patient's chances of recovery from the paralysis. Cinchophen is good if gout is the cause. Iodides help where syphilis is the cause. Rest and Epsom salt have many advocates. The opinions on diet have changed during the last few years and a mixed diet containing a moderate amount of proteid in the form of meat, fish and eggs is now believed to be allowable, except where nephritis exists. Also there are some exceptional cases of hypertension showing no head, heart or kidney symptoms which seem to be compensatory in their nature and need no treatment.

On the other hand, if one wishes to strike out for himself with other methods, I should like to point out for his consideration the fact, which appears in the diagram, that the combined effect of hypertension, A.S., and chronic organic inflammation always results in one constant condition, namely, hypertrophy of the heart, showing that the load on the heart is increased by these processes and that consequently every effort should be made to lighten this load. To achieve this result I have adopted the routine practice of having patients take  $\frac{1}{2}$  teaspoonful of cream of tartar in water before breakfast and at bed-time over long periods, to help clear out the kidneys; and on Tuesdays of each week to take  $\frac{1}{2}$  gr. of calomel every 2 hours for 4 doses; and upon Fridays to take  $\frac{1}{10}$  gr. of podophyllin every 2 hours for 4 doses to clear out the liver, with the hope in this way of relieving the heart of at least a part of its load. Also in all cases, and for long periods of

DIAGRAM NO. 2



time, I prescribe the original Metchnikoff culture of the

*Bacillus Bulgaricus* and the *Bacillus acidophilus* to suppress any intestinal toxemia which may be adding itself on to the basic pressure which, as we know, exists as a result of the pathological states brought about by organic and essential hypertension and resulting arteriosclerosis.

In conclusion I would like to call attention to another great cause of A.S., which is diabetes, as recently demonstrated by Joslin. He finds that 47% of diabetic

deaths are now caused by A.S. There is a difference, however, in the distribution of the A.S., since that from diabetes chiefly affects the arteries of the heart, producing angina and myocarditis, and the peripheral arteries of the extremities, causing gangrene and but rarely producing any hypertension. Hypertension and diabetes may co-exist in the same patient, having developed separately, and they then produce a more rapid and extensive A.S.

## Our Public Hospitals Past and Present

BIRD S. COLER, Esq.

RETIRING COMMISSIONER OF PUBLIC WELFARE

New York City

It is within the memory of the older generation when the public hospital was the last resort of the sick. Patients went there to die, and it was generally believed that if they dallied too long, they were given a dose from the "black bottle." This black bottle was supposed to contain "black drop," the popular name for tincture of opium, but the fear of the black bottle extended to all black or dark colored preparations. Hospital physicians of sixty years ago told of struggles with patients who refused to take the black draught, an infusion of senna with manna and epsom salts, because it was supposed to contain black drop. It was the custom in those days to paint the drug bottles containing narcotics and other powerful poisons black; and as opium and its preparations, especially the tincture, were much more extensively used then than now, and patients frequently died from an over-dose of the drug, there was a plausible reason for the fear of the black bottle.

There was, moreover, a very high death rate in the public hospitals. The only public hospitals then, in what is now New York City, were Bellevue Hospital at the foot of East Twenty-seventh street, and the Island Hospital, later called Charity Hospital, now the City Hospital on Welfare Island. The public hospital for Brooklyn was Kings County Hospital on the County Poor Farm in Flatbush, miles from the populous section of Brooklyn. There were also the Children's Hospital on Randall's Island, and the Insane Asylum on Blackwell's, now Welfare Island. These hospitals, then as now, had on their medical staffs the most prominent physicians and surgeons in the city, but with the meagre transportation facilities, it took the better part of a day to visit the Island Hospital or Kings County Hospital, and they were seldom visited by members of the staff. The Island Hospital contained mostly chronic cases, also cases sent in from the adjoining penitentiary and from the Alms House on the island. There were no trained nurses or trained attendants in those days. Aside from a few charitably inclined women who went to Bellevue to help the sick, the attendants there were hospital employees who were willing to work for five dollars a month, and homeless ex-patients. Naturally these formed the poorest kind of help obtainable. In the Island Hospital, prisoners were employed as hospital attendants, and, in Kings County Hospital, the attendants were recruited from the inmates of the Poor Farm.

Corrupt politics and a niggardly policy toward these public institutions deprived them of the medical advantages possessed by private hospitals. In the history of Bellevue Hospital there were periods of extravagance

and periods of miserly economy. The main building facing Twenty-seventh street was erected in 1826. The wings were erected between 1850 and 1855, when there was little need for so large a hospital. They were, however, erected to house Alms House inmates, but these were removed to Blackwell's Island, now Welfare Island, and, for years, parts of these wings were unoccupied.

The Island Hospital, begun in 1858 and completed in 1870, was, at the time of its completion, the finest and largest hospital in America. It was built by prisoners from stone quarried on the island, and much of its equipment was supplied by the Federal government during the Civil War, when it was used as a military hospital.

Prior to 1869, when the first horse-drawn ambulance was introduced in Bellevue Hospital, patients were taken to the hospital in any conveyance that was available, and in cases of accident, by any means of transporting the injured person, often the shutter of a window.

In those days, nothing was known of sterilization or other antiseptic precautions, and surgeons worked bare-handed, generally in their shirt sleeves. Laparotomies were rarely performed, as they were almost invariably fatal, and no matter what operation was performed, the surgeon welcomed the appearance of thick, yellow, laudable pus, and if such pus did not appear, he would use a seton of cotton or wool to induce pus formation. Lacking the modern methods and means of diagnosis, and with an erroneous conception of inflammation and repair and a consequent wrong method of treatment and a resultant high death rate, there was far less surgery sixty years ago than there is today. Emergent cases were operated immediately upon admission to the hospital, but whenever it was possible to defer operation, it was postponed to the regular visiting and clinic days of the attending surgeons. But surgical intervention was the last resort, and patients usually made their wills before entering the operating room. It was a popular belief that most operations in public hospitals were performed to enable students to witness or take part in the cutting process, and this increased the dread of the public hospital.

These institutions labored under other disadvantages. During the height of the political corruption of the late sixties, they were badly managed; many of the employees were political hangers-on for whom some provision must be made in the interim between elections, and who were worthless so far as actual service was concerned. Necessary repairs were neglected

and necessary equipment, when furnished at all, was of the poorest quality. Patients complained that upon their discharge, money and valuables that they had in their pockets were missing, and sometimes the clothes were missing. Charges of favoritism were frequently made by those who were unable to give generous tips to attendants. There were frequent complaints of lack of cleanliness. Altogether, the public hospitals in this city and in Brooklyn were in disrepute, half a century ago.

The attitude of the public toward our public hospitals has undergone a revolutionary change in this last half a century. Today, the hospital is the first resort of the sick, and if a patient cannot enter a private institution, he will seek admission to a public hospital. Even those which are, at times, criticized for shortcomings, are preferred to the home, while some are so highly esteemed that they have a waiting list for admissions. The Maternity Wards of Cumberland Hospital, for example, are always crowded and many women who want to be delivered there must be sent to some other of the public hospitals. Other hospitals are frequently overcrowded by patients who prefer to be treated in these institutions than in their own homes.

In 1905 the Bellevue and Allied Hospitals, Fordham, Harlem and Gouverneur Hospitals were taken from the Department of Charities, now the Department of Public Welfare, and placed under the control of a Board of Trustees. The Department of Charities retained control of Metropolitan, City, Kings County, and Cumberland Street Hospitals, the last acquired in 1902, the Special Hospital, connected with the City Homes for the Aged, and the Children's Hospital for Mental Defectives on Randall's Island. Since then, every one of these hospitals has been enlarged, the Cumberland Street Hospital having received in 1922 a new building called Cumberland Hospital, a few blocks away, while the old building is now used as a Cancer Hospital. Greenpoint Hospital, Coney Island Hospital, and the new Bronx General Hospital were erected as general hospitals. Lincoln Hospital was taken over by the city. Sea View Hospital, the largest municipal hospital for tuberculosis, was erected; the Cancer Institute and the Neurological Hospitals were created.

It is safe to say that all of the public hospitals erected during the last quarter of a century compare favorably with the most complete private hospitals erected during that period. In some respects, they are superior. Sea View Hospital, with one thousand beds, is the finest public hospital for tuberculosis in the world, and it is always filled. The Cancer Institute on Welfare Island, the largest and most complete institution of its kind, has acquired a world-wide reputation for its equipment and the work done there. When Coney Island Hospital was opened with one hundred beds in 1910, it was thought unnecessary, or far too large for the needs of that locality. For many years it has been too small for the calls made upon it, although its bed capacity has been increased nearly fifty per cent and new additions, now in course of construction, will double its capacity. Greenpoint Hospital, the new Cumberland Hospital, indeed, all the public hospitals, are frequently overcrowded, the demands upon them increasing faster than the proportionate increase in the population.

Now, what is the reason for this change in the attitude of the public toward the public hospital during the last fifty years? Then, it was the last resort; now, it is the first resort of the sick. Then, it bore the imaginary warning: "Leave hope behind, ye who enter here;" now, "enter with hope for restoration to health

and happiness." It is a change in the attitude of those who are responsible for the public care of the sick. It is the same change in spirit that removed the name "Charity" and substituted the name "Welfare" through action of the City Department having charge of these institutions, that wiped out the stigma of poor house and alms house, and substituted homes for the aged and infirm. Science and philanthropy, which seek the restoration to health as a public obligation, have supplanted public charity grudgingly given as the easiest way out of a disagreeable public duty. The sick go to the public hospital because they find there the most famous specialists, the most complete medical and surgical equipment, laboratory facilities, trained nurses and attendants, and everything that can be done and given to secure speedy restoration to health.

Our public hospitals lack the luxurious adjuncts of private hospitals, beautifully fitted up waiting rooms and private rooms, expensive furnishings and decorations, and similar extravagance. But they possess everything that is conducive to the care and treatment of the patients. The New York Cancer Institute on Welfare Island possesses two grams of radium purchased at a cost of \$140,000, and the most complete equipment for the treatment of cancer cases in any hospital in the world. There is no finer and more complete surgical pavilion anywhere than the new surgical pavilion of Kings County Hospital, with two hundred beds and superb operating rooms. This building embodies every modern improvement in hospital structure and equipment. Sea View Hospital is the world's model for tuberculosis hospitals. A foreign medical commission, making a trip around the world to secure information about the most advanced features of hospital construction and work, recently visited Cumberland Hospital. So impressed were the visiting physicians with the work done there, that they took moving pictures of some of the activities in that hospital for the purpose of introducing these features in their own government hospitals.

There is hardly a public institution under the control of the Department of Public Welfare that has not some feature of exceptional merit, some feature that is not generally found in private hospitals. Imbedded floor lights and golden yellow shades to avoid overhead glare, elevated nurses' stations each overlooking two wards, wash basins in the wards, and wards painted in eye-rest green, are some of the innovations in public hospitals. The latest diagnostic and therapeutic appliances are used, including the electrocardiograph, X-ray, fluoroscope and diathermy apparatus, radium, various heliotherapy lamps, etc. The cost and the space required for this apparatus bar their use by private physicians and even by small private hospitals.

In recent years, the city government has been more liberal in its appropriations for its hospitals and the attending physicians have been able to work under the most favorable conditions, with the most modern armamentaria. While some patients still prefer the private hospitals for such personal reasons as nationality, race, religion, occupation or social status, it is now generally conceded that the medical service given in the public hospital is unsurpassed and that the chances of recovery in the public hospital are infinitely better than at home or in a small private hospital.

It is safe to say that the administration of our public hospitals during the last ten years has done more to remove the ancient stigma and create a sentiment of public respect for these institutions than their administration during the preceding half century.



## DOCTORS AND DIVIDENDS

By HERBERT KAUFMAN

Realty taxation to the contrary, the most precious bit of land on the Island of Manhattan is the slope that holds its new Medical Center.

Acres of skyscraping hospitals crowd the site where Billy Sunday last harvested souls in New York.

Here stands a re-servicing station on the scale of vast industrial plants—furnishing surgery and research with a group of workshops whose output will *annually* return erection and investment expense.

This is a business proposition, not a charity. America does such things because they pay.

Vanished races all perished in the balance sheet. Growing overhead and dwindling returns wrecked them. They didn't make a sufficient profit on average life spans.

Early peoples died too soon—child mortality was terrific. Past centuries never realized the incredible earning power buried in premature graves.

Medical ignorance robbed Time of myriads who might have been salvaged for useful and productive careers.

Every individual thus lost to past society deducted from its pockets the total amount spent upon their periods of dependency.

Each able-bodied citizen gainfully employed has a cash value of *at least* thirty thousand dollars to a modern community.

If we permit him to go blind or remain disabled, if he passes before maturity, we lose that dividend.

Therefore, it's *cheaper* to conserve his health and preserve his utility.

That's why the hillside on upper Broadway is literally and figuratively a *savings bank*—and the biggest in town.

## Familial Diseases \*

ALFRED GORDON, M.D.,

Philadelphia

Familial diseases presuppose pathological states which repeat themselves in several members of the same family, run an identical course and develop independently of exterior causes. They are disorders of the germ plasm which contains originally a latent morbid taint which leads to the evolution of an abnormal type. In any given physical or mental anomaly it is important to determine whether it is the result of an accident in the life of the foetus or hereditary. In the first case the damage is confined to the carrier of the anomaly. In the second case, on the contrary, the affection is inherent and belongs to the group of etiological factors that are capable of exercising their influence on subsequent generations. Familial disease, therefore, constitutes a problem of heredity. If one draws a parallel between disorders transmitted to the descendants with those present in the ascendants, almost invariably a similarity in the form is found. Heredity, generally speaking, is expressed by transmission of similarity, and more in the fundamentals of the latter than in its form. If sometimes we do observe dissimilarity of the transformation in hereditary characteristic units, we are dealing in reality only with apparent changes of source of the cardinal hereditary phenomena irrespective of their form. What is commonly called predisposition is the predominant feature transmitted directly by the fundamental disorders of the ascendants in a physical, intellectual, moral, or emotional domain. The most illustrative examples of such occurrences we find in familial diseases.

We are in possession of facts showing that almost all apparatuses of organic life are susceptible of presenting disorders and lesions characteristic of familial diseases.

To Charcot and his pupils belongs the merit of observing a family character in some diseases of the cerebro-spinal system. Cases have been observed with familial anomalies of the cerebellum, the pons, medulla, of cerebro-spinal tracts, etc., and functional nervous disorders, such as myoclonias or tremors which may

be encountered in members of the same family. Atrophy or other fundamental disorders have been observed as being confined to portions of the spinal cord alone, manifesting themselves clinically in various forms of disability such as paralysis in one or several members of the same family.

Myopathies, which were first described by Duchenne de Boulogne in 1861, are a type of familial diseases. Cases of muscular dystrophy of the facio-scapulo-humeral variety, with its progressive involvement of the upper and lower extremities, also of the thorax, have been observed in brothers, sisters and cousins. This same affection may appear in subsequent generations. A family character may be observed in any of the forms or groups of muscular atrophy. The examples described below are essentially myopathies, that is the atrophy is confined to the muscular fasciculi but there are also evidences of involvement of the gray matter of the spinal cord. The identity of the familial anomaly is striking in the three members of the same family. In addition to the muscular disorder a conspicuous family anomaly is also seen in the state of the deep reflexes. Evidently the anomaly is widespread and profound in the three close relatives. The cases are as follows:

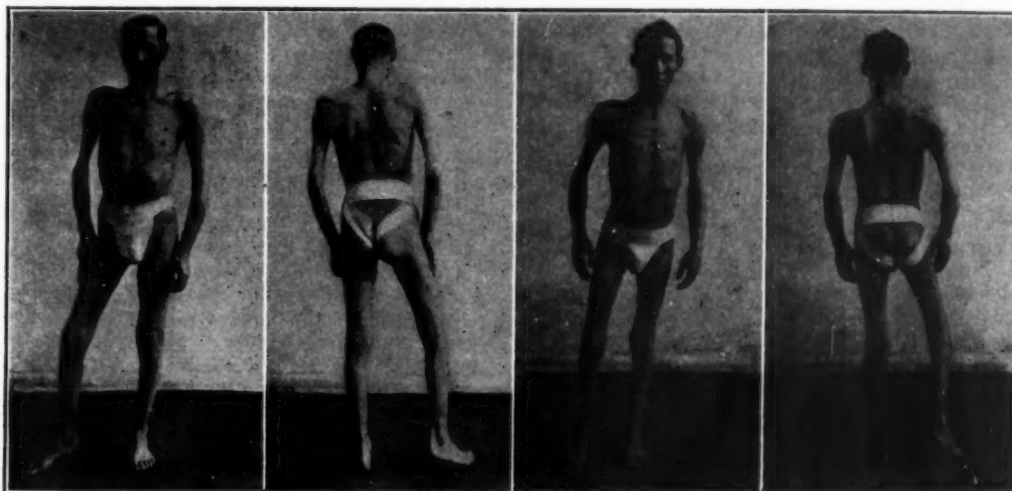
Familial Muscular Dystrophy in Three Members of the Same Family with Loss of Tendon Reflexes in All.

The father and son show unusually great resemblance in their disorder. Both arms are atrophied to the same degree and they are ankylosed at the elbows. They cannot extend their arms fully in the upward direction. The supra- and infraclavicular fossae are exaggerated because of atrophy of the corresponding muscles, more on one side than on the other. The power of the biceps and triceps muscles is diminished. The pectoralis muscles in the father are also involved. The small muscles of the hands of the father (not of the son) are markedly atrophied. The grip of the hands in both is diminished more in the father than in the son. The muscles of the forearm are also involved but to a lesser degree than those of the arms. The reflexes of the upper extremities are abolished in both. The

\* Patients exhibited at the meeting of the Philadelphia Neurol. Soc., November 23rd, 1928.

scapulae are receding from the thorax in both, more in one than in the other. There is scoliosis in both. Lordosis is marked. The breathing is diaphragmatic. Pelvis and lower extremities are tilted to one side in both. Both have some difficulty in getting off a chair and in walking up stairs. They have difficulty in getting up from the floor. There is wasting of the gluteal muscles in both. Both limbs in the two patients are

could be detected. Evidently certain muscular groups suffered in their development and the germ plasm defect was transmitted from the father to the children. The tendon reflex action also presents a family characteristic. Its absence in the four extremities was not due to the atrophy of the muscles, as in some of them the wasting was too slight to interfere with the response to tendon stimulation. In the girl, for example, the



FATHER—FRONT VIEW

FATHER—BACK VIEW

SON—FRONT VIEW

SON—BACK VIEW

thin. There is some weakness of the external group of muscles of both legs, more in the son than in the father. The patellar tendon reflexes and the Achilles' tendon reflexes are absent in both, even with the reinforcement method. The plantar reflex is normal in the son but frequently in extension on the left and only occasionally on the right in the father.

The atrophy is particularly evident in both legs but not in the thighs in both patients. The atrophied muscles frequently present fibrillary contractions.

The affection commenced in both at a very early age, in the father at 12 in the hand muscles, and in the boy at six in the leg muscles. Three years ago they were both operated on for talipes equinus and for shortened Achilles' tendon.

The daughter, a girl of fifteen, like the two other patients, also presented at an early age difficulty in walking without aid. Three years ago she was operated on for double talipes valgus and for shortened Achilles' tendon. She also shows ankylosis at the left elbow and some wasting of the muscles below. There is no other atrophy in the upper half of the body. The reflexes of the upper extremities are absent. She shows marked scoliosis. The calf muscles and the gluteal muscles are unusually developed and in spite of it she has difficulty in going up stairs. The patellar tendon reflexes, also the Achilles' tendon reflex, are absent on both sides. The plantar reflex is normal.

This family of three showed negative Wasserman test on repeated examinations. Their blood chemistry is negative. Urinalysis is negative.

The mother of the two children is normal somatically. The mental state of the three patients is normal. No other abnormality could be traced in the family either on the father's or mother's side. The three cases are examples of a morphological hereditary anomaly of a familial character. They belong to the category of abiotrophy. No chemical abnormality in metabolism

quadriceps femori are normal and powerful. The abnormality therefore lies in the central nervous system. A syphilitic basis is not present in this family.

To sum up the present study of the disorders in this family, one must admit that the subject is one of structural anomalies created by evolutionary disturbances. They are variations from the architectural normal type. They create a predisposition which exists at the time of conception and is therefore transmitted to the product of the latter. A knowledge of the laws of heredity is of paramount value from the viewpoint of eugenics. Familial diseases or defects are governed by the general laws which are identical with those that regulate the transmission of normal morphological characteristics from the highest to the lowest point of the animal scale. Morbid heredity, as far as familial diseases are concerned, is controlled by the same laws as physiological heredity.

1812 Spruce Street.

#### Tularemia

Tularemia should be considered when a patient presents any of the syndromes described plus a history of having been bitten by a tick or fly (especially horsefly) or of having dressed or dissected a wild rabbit.

There is no specific therapy for the disease. Treatment is palliative and symptomatic. There is no advantage in excising or incising glands unless, and after, suppuration has progressed to marked fluctuation. Whenever a case develops in a locality the physician should do what he can to acquaint the community of the danger in handling wild rabbits or squirrels. The control of the disease is essentially a public health problem.—Creel, Calif. & W. Med. Oct. 1928.

#### Costs of Sickness Estimated at \$31.08 Per Person in Year

The annual capital loss to the people of the United States through sickness, exclusive of non-measurable losses due to loss of future wages and reduced earnings caused by slight illness, is \$31.08 per person or \$134.68 per family, according to Homer Folks, vice chairman of the Public Health Council of New York State.

## Hasty Diagnosis of Special Symptoms

GEORGE B. McAULIFFE, M.D.  
New York.

In the medical schools of today the students gain a knowledge of the specialties sufficient to enable them to make a tentative diagnosis of the ordinary diseases of the different special organs. Formerly, their knowledge was so meager that the value of their opinion was technically negligible. Despite these curricular improvements, we find that the little knowledge which the modern general man acquires in special work is not founded on sufficient clinical work to make him scient in diagnosis and he makes snap diagnoses which are based on symptoms and not on objective examination. A general man should be able to use the head mirror, the nasal and aural speculum and the ophthalmoscope. The proper use of these can be learned in a few hours. He should not diagnose any salient symptoms, much less should he treat or send for treatment cases labelled with his imperfectly formed opinion.

Owing to the operation wave which has engulfed mastoid inflammation, a mastoid phobia has arisen and many patients with indefinite symptoms have been led to believe that they have mastoiditis—an error which is dissipated ordinarily by the specialists. If a patient develops a post-auricular swelling a mastoiditis is diagnosed without any differential test. If a patient complains of pain over the mastoid or below the top, the same diagnosis is hastily hinted at and the patient hastens to the aurist to have his fear allayed or confirmed. There are more cases applying to the aurists for treatment of these pseudo-mastoid conditions than for actual mastoiditis. The general man is a good eliminationist in ordinary conditions. Why does he not use the same common sense here? He is generally afraid. *Omne ignotum pro magnifico habetur*—"Everything unknown is held to be great." He knows or should know that primary mastoiditis is rare; that the ordinary cases are suant to an aural discharge; that temperature is generally present; that an X-ray will show the blurring of the trabeculae of the cells, that tenderness elicited by perpendicular pressure on the bone will be present in the majority of cases of mastoiditis; that the tenderness may be, however, over an inflamed post-auricular gland, whose rounded outline differs from the profuse boggiess of a mastoid edema; that a mastoid edema which pits under pressure, but does not show tenderness under the finger, is not as a rule mastoiditis, but may be the result of a boil on the posterior wall of the canal. He should know also that pain elicited by pulling the pinna shows that the cause is in the canal; that pulling the auricle never gives pain in middle ear inflammation.

What then should the general man do in such cases? He should take the temperature, he should have an X-ray made and leave the interpretation of the picture to the X-ray man. He should find out whether there is discharge and deafness. He should question the dental condition or have an X-ray of the teeth to help him. He should examine the throat. He could then properly evaluate the symptoms and make a fair diagnosis of the case. As I said before, there are more cases of neuralgia coming to the aurist as possible mastoiditis than the real condition.

Sinusitis has been so general in grippal infections that the general practitioner and the laity think every severe coryza must be a sinusitis and many cases are

sent to the specialist with a premature diagnosis of sinusitis based on nothing but the severity of the attack. Here, again, it is an easy thing for the general man to send his patient to one of the numerous X-ray laboratories which will give an X-ray picture of the sinuses and its interpretation. Yet it is the specialist who always demands the picture and in the majority of cases makes no diagnosis until he receives confirmation from the X-ray report.

As frequently happens, a patient consults the family physician concerning his nose and he is told to have a growth removed. Examination shows perhaps only a normal or enlarged turbinate. Hygienic advice may be all that the patient needs. There is too little of that branch applied to the nose. The endeavor seems to be, get all irregularities of outlines straightened by operative measures rather than treat the catarrh from a hygienic and metabolic basis.

Every sore throat whether from nasopharyngitis or from a disordered gastrointestinal tract is told ordinarily to have a tonsillectomy. The patient may never have been conscious of his tonsils or a tonsillitis, but generally obeys the mandate and seeks a specialist to have the tonsils executed as the cause of his condition. While it is a moot question how far tonsillectomy goes to remove these throat inflammations, I feel that more tonsils are taken out without cause than is necessary. I have yet to be convinced that a non-cryptic tonsil without pus has any baneful effect on the health, yet some go so far as to state that the tonsillar tissue, itself, is provocative of infection. It may be a long time before conservatism sets in. Meanwhile very few escape from the operation. The only solace is that the absence of the tonsil does not seem in any way to be deterrent to health. Neither does the absence of the appendix or an auricle or one kidney, yet this is hardly a cogent argument for operation. While statistics are slightly in favor of tonsillectomy as a protective measure they do not show an absolute protection. Who has courage to stem the tide? So general practitioners make no differentiation of pharyngeal inflammation, but find it much easier to advise tonsillectomy without investigation.

Headaches are sent to the oculists without much eliminatory diagnosis. While many are benefited by refraction, a great number are not and we find that muscular anomalies are present, induced by anaemia (constipation and general nervous depression. If the patient's hemoglobin and the condition of the gastrointestinal tract were investigated and treated a good many of these cases would be benefited if not cured.

I am not a follower of that new line of ocular therapeutics which discards glasses. I have benefited too many patients with weak cylinders to decry their potency, but I have also seen many cases where glasses have made them emetropic without relief of their nerve exhaustion and the problem has reverted to general tonic treatment. Why does the general man not evaluate ocular symptoms more carefully? While I do not counsel delay in an ocular examination of headache, because many a headache of middle age is the precursor of glaucoma, I speak merely of the summary dismissal of the case from general care without sufficient inquiry into the body metabolism.



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## Our Public Hospitals Past and Present

In this issue the retiring Commissioner of Public Welfare, Hon. Bird S. Coler, summarizes the remarkable changes in our public hospitals which have placed them in the forefront of the world's institutions. The sentiment of respect for these institutions which now animates the informed public may be credited largely to the genius of Mr. Coler for humanizing welfare work, which, on the grand scale, is so likely to become lifeless and heartless.

## Public Health and Degenerative Disease

It is a wise philosophic view which Dr. William J. Mayo takes of the cancer problem. The significant thing to bear in mind, he thinks, is that cancer, along with the other degenerative diseases, proves the advance of the medical frontier; that is to say, most human beings, formerly, did not live long enough to acquire the degenerative diseases. In this sense, the future holds hope rather than discouragement. It is to be assumed that internal medicine, with its rapidly growing knowledge of colloid and molecular changes in our tissues and fluids, will yet be able to deal effectively with even the degenerative diseases, including cancer.

"What the eighteenth century did for the soul of man, and the nineteenth for the daily life of man, the twentieth century will surely achieve for its corporeal ease and security."

The four leading causes of death in 1850 were tuberculosis, diphtheria, scarlet fever and typhoid fever. Re-

cently heart disease and pneumonia have headed the lists.

Strong agencies (e. g., the University of Chicago's Lasker Foundation) are already grappling with the new problems of public health.

In the meantime we are going to carry on in our determination to increase the expectancy of life at birth—and that very soon—to sixty-five years. According to Fishbein, life expectancy at fifty has been advanced only from 21.2 to 21.5 years in a period of one hundred years, so it is obvious that the battle which confronts us will have to center on the degenerative diseases. The protection that has heretofore been given to man in the mass must now be increasingly applied to the individual, especially the individual of middle or advanced age. The doctor must become an instructor in sane habits of diet, exercise and work. In the words of Fishbein, the individual must be immunized against "Americanitis."

Winslow declares that in the first quarter of the twentieth century already no less than twelve years have been added to the life of the *average* man and that "over one-third of the total burden of disease and early death which weighed upon the human race fifty years ago has been lifted from its shoulders." He sees the man of seventy made "equivalent in vigor to the man of sixty of an earlier period."

Such progress has been made and is being effected today through participation of the modern physician in all forms of medicine: private practice, public health, civic medicine, preventive medicine and research.

Bloodgood of Johns Hopkins believes that a Government tax should now supplement our research efforts, to enable medical men to study more intensively the diseases before which we are still helpless; remedies and preventive means will thus be much more rapidly developed. Private subsidies and the spasmodic provisions of cities and States are not enough. The Government is fairly generous in its care of cattle, hogs, sheep, horses and plants; why not a better financed attack upon the fundamental causes of sickness, disease and premature death in the case of human beings?

The Government now spends about \$13,000,000 in fighting plant diseases and pests, and \$8,000,000 in combating the diseases of animals, but only \$43,000 goes to the research department of the Public Health Service.

As regards the more than two billions of dollars contributed annually to philanthropy, medical research, public health institutions, health education and hospitals receive only about nine per cent of the total, according to the John Price Jones Corporation (publicity experts) and Jones and Brakeley (advertising experts).

Dr. Charles H. Herty estimates that sickness costs the United States \$15,000,000,000 every year, which "almost equals our national debt and constitutes an annual loss greater than all debts owed us by foreign countries. It is more than two-thirds of the \$22,000,000,000 required annually for feeding the nation."

It is obvious that statesmanship must wed with science if we seriously desire to attain real mastery over the diseases that *unnecessarily* afflict us.

## The Doctor's Secretary

The secretary covers a multitude of sins of omission as well as of commission. It is so easy to "pass the buck" to that useful young person that it seems as if she really knows more about our business than her employer, even when he is the head of a big

corporation. While he is so "busy" (on the links?) she is always on the job—phone, typewriter, and other activities.

The doctor's secretary is a new institution in this age of improvements, and a valuable one too. But, we often think of the long-distant past when we were active in medical school and three or four hospitals—not to speak of crowded office and outside calls—and managed to handle the work fairly well, except collecting bills, without having an efficient young woman at our elbow to keep our books and collect long-overdue accounts.

Are doctors really "busy" nowadays, or do they only think so? We have pondered long over this question and are still unable to find an answer. Personally we never have learned to have another familiar with our own private affairs and those of our patients. *Mais, nous avons changé tout cela.* It is a real pleasure to hear a sweet thing's voice over the 'phone instead of the curt, often gruff accents of her employer and this fact alone doubtless has a great influence on inquiring patients. All the secretaries whom we have met in big insurance companies and in Wall Street have been most courteous and efficient and we rather like to transact our small business with them, while the boss is at a "conference." What is a conference anyhow, lay or medical? Whatever it is, it furnishes a good excuse to the head of the concern for not seeing unwelcome visitors. Unfortunately patent medicine men, insurance agents and chaps of that ilk know how to slip by the most suspicious guardians and to break into the doctor's office hours or hours of meditation and watchful waiting, but it doesn't work in the "street."

But the secretary has come to stay, and since the gentle art of correspondence has lapsed, we must be content to receive typewritten letters from her in lieu of a few welcome lines in her employer's hand.

*N'emporte; c'est la guerre.—H. C. C.*

### Safety in Ocean Travel

It is a stray thought that makes one wonder if all ocean liners are properly equipped with fresh antitoxins of various kinds. It is obvious that the dispensaries are inspected by medical officers at regular intervals. There should be an adequate supply of all kinds of antitoxin in order to take care of an epidemic. One wonders how a suspicious throat is treated as there is probably no laboratory on board of most liners. How could one be assured that diphtheria could be differentiated from a streptococcal throat? At all events, it is not out of place to suggest that all ocean liners carry an adequate supply of diphtheria antitoxin, anti-anthrax serum, anti-pneumococcal serum, anti-meningococcal serum, scarlet fever antitoxin, tetanus antitoxin, erysipelas antitoxin and rabies vaccine. More than this, they should be properly dated.

### Points on Radium

The use of radium has now passed well beyond the experimental stage. Not only has research increased our understanding of the physics of the element, and consequently its therapeutic applications, but enough time has elapsed since its first employment to allow some estimate to be formed regarding its ultimate effects. We know, for example that tumors vary considerably in their sensitivity to radiation. Epitheliomata of the epidermis and of the oral region are specially sensitive, and their cure by radium may now be predicted with confidence. Cancers of the breast and of the cervix uteri are likewise sensitive to radiation, but treatment of these may be complicated by the degree of extension to deeper structures. On the other hand, rectal cancer is distinctly resistant to radiation, and adenocarcinoma of the uterus as well as that of other glands are likewise only slightly affected by radium.—*The Canadian M. A. J. Sept., 1928.*

## Miscellany

### The King's Physicians

The mild criticism among the English of the King's physicians may not be reasonable and just, but it is an indication of the genuine feeling of peoples for their monarchs. Today it means nothing more than verbal criticism from the masses, who may not know whereof they speak. Concerned over the King's condition, they become impatient and there is nothing out of the ordinary in this. There was a time, however, when dissatisfaction with the monarch's physicians meant something more than annoyance to them.

More than a century ago, when King George III. was in a serious condition, and he failed under treatment to make the progress hoped for by the people, the physicians were in actual danger of physical violence. The old diarists of the court tell how the peasants, in ugly mood, lined up along the highway awaiting the appearance of the physicians on their return to the city with a view to emphasizing their affection for the monarch by beating the men of science, unable to achieve miracles. The doctors were forced to cut across fields to escape.

This incident of many years ago throws a destructive light on the stories that the monarch of that time was unpopular with the English people. With many of the politicians and members of Parliament he was anathema, it is true, but the evidence is strong that among the great mass of the people he was greatly liked.

So, with possibly one exception, all the British monarchs of more than a century have had a hold on the affections of their subjects. The Kings have been symbols of England. The feeling of the most humble of the people has been possessive.—*Evening World.*

### As a Man Thinketh

Often enough we speak or hear of the triumph of mind over matter, and all too frequently we class the phrase as one of those *clichés* or "bromides" which are high-sounding but do not bear close examination. Yet imagination is more powerful than many a more tangible force, as the following instances will show.

A student at a French University, who had made himself particularly obnoxious by his spying habits, was dragged from his bed one dark night by a number of masked students, and brought before a tribunal. Here, with great solemnity, he was arraigned for his misdeeds, and sentenced to death by decapitation.

A gigantic "executioner," carrying a huge axe borrowed from the University museum, then led him to the block where, despite his struggles, he was placed in position. The axe was raised aloft and—a single drop of water was allowed to drip upon the nape of his neck.

A burst of laughter followed the "execution" as the students, discarding their masks, danced in a ring around their unfortunate victim. But their hilarity was changed to horror when they found that he remained inert with his neck resting on the block. On examination it was found that he was dead.

His mind had apparently framed itself for death, and it was believed that he died at the moment the water touched his neck.

One of our greatest medicos, now dead, was wont to instance a case of imagination triumphing over the ills of the body. Whilst a medical student, he escorted his

fiancée to the theatre, where, after a while, she complained of vertigo and acute headache. Taking something from his waistcoat pocket he slipped it into her hand and told her to place it under her tongue, telling her that it would put her right instantly.

Sure enough, the oracle worked; the dizziness and pains vanished, and the girl enjoyed the remainder of the play. When, however, she took the "something" from her mouth, she found it was nothing more or less than an ordinary shirt-button!

Before ever the word "auto-suggestion" was coined, and years before M. Coué gave to the world his slogan: "In every way I'm getting better and better every day," there was (and probably still is) an "imagination" cure for rheumatism which was singularly effective. The sufferer held a penny in each hand, and thought hard on the curative properties of copper. When the taste of copper was felt on the tongue it was believed that the remedy was "working," and that the uric acid was being dispelled from the affected parts.

There may or may not be slight medical grounds for the curative properties of the copper, but it was obvious that the imagination had the greatest influence in effecting the cure or, at least, in alleviating the distress of the patient.

Many such instances as these could be quoted to show how the workings of the mind can exercise a strong influence over the physical elements, and there are everyday examples, for good or for bad, of the truth of an age-old saying founded on Holy Writ: "As a man thinketh, so is he."—THOMAS H. LEWIS, M.B.E., F.R.G.S.

### Three Evils

Three evils affect medicine and medical practice among us today:

**Commercialism**—which has many forms and manifestations, chief of which, however, is the improper extension of veterinary medicine. Veterinary medicine is practice which is performed on the body of another without his solicitation or necessary consent. It is honorably performed upon animals in captivity. Wild animals do not enjoy it and free men resent it. In several subtle forms it is invading human practice.

**Partialism**—or Pseudo Specialism—in which the physician working alone or in group assumes only a partial consideration of the patient's problem without proper centralization and coordination by one familiar with the whole.

**Standardization**—which may be made a willing and useful guide and servant or may become an inexorable and tyrannical master if it be allowed to go beyond control.—JOHN E. JENNINGS, M.D., in *Bulletin of the New York Academy of Medicine*.

### The Hospital Staff Meeting

At the recent meeting of the House of Delegates of the American Medical Association in Minneapolis, numerous resolutions and recommendations were proposed, most of which were voted down as contrary to the purposes and aims of the Association. There was, however, one resolution which it seems worth while to comment upon more than briefly. This resolution referred to the very large number of medical meetings which are held in the larger communities where there are considerable numbers of hospitals. As a result of the agitation in the American College of Surgeons these hospitals have felt it necessary to hold at regular intervals staff meetings at which scientific programs were presented. It was felt by the House of Delegates of the Association that these staff

meetings did much to detract from the meetings of organized medicine. They are held at frequent intervals; they are not open to the general medical public, and they are essentially local. It is felt that members of the staffs of the hospitals, spending considerable number of evenings a month at these meetings, neglected to attend the regular meetings of organized medicine. By their absence they take away an important element of the Society, they weaken scientific programs, and they are not able to enter whole-heartedly into the duties which an active organization requires of its members. In addition to the factor of requiring too much time, it was felt by the delegates that it was not consistent with the purposes of the American Medical Association for its members to be obliged at the virtual command of an organization which comes in contact with only a small fraction of the medical profession to be subservient to the orders issued by this particular organization. Lastly, it was felt that the American Medical Association itself should make a thorough study of hospitals and prepare a list of acceptable hospitals.—*New Orleans Med. and Surg. Jour.*, July, 1928.

### Prescriptions and Recipes

Diet is important in the treatment of disease. Johns Hopkins has recognized this fact by making a course in cooking part of the fourth year work of medical students. Nutritional control of pernicious anemia is not infallible as a cure, but remarkable advances have been made. This is just one instance of relief from disease through corrective diet. The general public has heard of the regenerative effect of liver on the red corpuscles, and so have the butchers. Calves' liver now costs a dollar a pound. In the classes at John Hopkins the young men will learn not only why hemoglobin regeneration occurs when liver is fed to an anemic patient, but also how to prepare it to get the most value. Why the price has gone up is not required to be taught.

When a doctor now recognizes a certain disease in his patient and wants him to have plenty of carbohydrates and not much protein in his diet, he orders generous use of vegetables, with meat, eggs and fish only in small quantities. The young doctors of next year will be able to give intelligible instructions for cooking the food they prescribe. On one leaf of their pads they will scribble the hieroglyphics which provide the patient with nauseating medicines. On the next they will write the recipe for an appetizing concoction that is just as good for him as if it tasted like poison. It is amusing to think of doctors and nurses in hospitals chatting about something besides anatomy and operations. They will be able to exchange notes like two housewives.

Many doctors already know something of cooking. Some have made a hobby of their skill in preparing one or two special dishes. The new cook-doctors should be able to run through an elaborate menu as easily as they do a tonsillectomy. They are already accustomed to careful measurement of drugs, the action of heat in crucibles and ovens, and the importance of cleanliness. When they get out Mrs. Ida Bailey Allen's cook-book they will follow directions with the precision of a chemist. No pinch of this and dab of that will satisfy their scientific minds. Creamed spinach and a culture in a test tube will receive the same meticulous attention.

Women are certain to approve this new project at Johns Hopkins. They will hope that the idea will spread, so that not only medical schools but all colleges will include cooking classes for men. And men, too, will probably like the plan. With so many women devoting themselves to business, it would not be a bad scheme to



teach prospective husbands how to fend for themselves in the home.—*New York Times*.

### FOUGHT HOSPITAL METHODS

**Paper, Now a World Authority, Overcame Many Powerful Enemies in Its Early Days**

*The following article by the editor of The Lancet gives some little known information concerning the inception and early history of that internationally famed London medical publication. The writer came here recently by invitation to deliver the Hunterian oration before the Clinical Congress of the American College of Surgeons. He joined The Lancet staff in 1892 and has been editor of the paper since 1909. Graduated from Cains College, Cambridge, and St. George's Hospital, London, he is the author of several medical works. He was knighted in 1921.*

BY SIR SQUIRE SPRIGGE, M.D.

The *Lancet*, which entered its 106th year a few days ago, was born on Sunday, Oct. 5, 1823, being issued from the dining room of the anonymous editor's house in Norfolk Street, Strand, London. Its present location, which it has held for some ninety years (namely 423, Strand, and 1 Bedford Street, London, WC), is distant but a few yards from the scene of the accouchement. Much of that dining room furniture is still used in the general editorial room and in the private rooms of the editor and of the manager, while in the editorial room hangs a sketch of the founder, Thomas Wakley, by Sir Edwin Landseer.

It may be asked why this hero-worship of Thomas Wakley, and the reply is that the tiny paper, which he issued in a rage from his dining room more than a century ago, as it developed under him and the group of writers which his courageous and often undisciplined activities attracted, led to reforms in the medical profession of Great Britain destined to have their reflections and repercussions throughout the medical world. Wakley and his associates revolutionized hospital management in Great Britain, brought about the registration of doctors—in other words the systematic education of medical students—and secured legislation in behalf of the public in great fields of sanitation. All this is not the romantic imagining of a successor to Wakley's editorial chair (incidentally, to that actual piece of furniture); it is set down, with chapter and verse for the statements, in the lives of the man, and in the pages of the British Dictionary of National Biography.

Why was Thomas Wakley in a rage when he founded *The Lancet*, and how did the private exasperation of a completely unknown doctor, aged only 28, come to bear such conspicuous fruit? His own career as a student and young practitioner furnishes the reply. He was the eighth son of a Dorsetshire farmer, walked to London to save money which he would require for fees and books, obtained his diploma without any individual aid from the teachers at his hospital—at least, so he believed—and on being qualified found that he was condemned, under the system of favoritism and nepotism prevalent in the London schools of medicine a century ago, to remain an obscure and struggling practitioner—one to whom all reasonable chances of advancement would be denied. For the staffs of the hospitals neglected their educational duties toward the students in general, confining their interest to those lucky youths who were either their relatives, the children of their friends, or the disburers of large fees for apprenticeship.

Young Wakley had no personal relations with his teachers of any sort and no money; and while he saw

contemporaries of less mental power than himself already marked out for material success, he felt that no such happy fate would befall him.

As a matter of fact, one way out offered itself and Thomas Wakley made an advantageous marriage, in circumstances which display him, it should be added, as a lover and not as a fortune-seeker. But a promising start in practice, with aid of his wife's family, came to a prompt and disastrous end. The young couple took and furnished handsomely a house in a good and almost fashionable neighborhood and immediately the house was set on fire, while Wakley was savagely assaulted.

The episode at the time was a mystery, but later a curious and sensational explanation emerged. Thistlewood, a political desperado, had just been publicly executed, and it was rumored that the masked agent of justice was Thomas Wakley. It is now known who the executioner was and how the wrongful report arose, but Thistlewood's followers believed what they had been told and took this method of reprisal. The method ruined the victim. The insurance company refused to pay, hardly believing that such valuable property as was claimed for was in the possession of these young people, and Wakley was unable to give any reason for the personal vindictiveness against himself. Action at law terminated finally in Wakley's favor, but by this time his expenses equaled the sums received, and when he went to a more modest domicile in Norfolk Street, he was a deeply injured man.

In this frame of mind the idea of starting a newspaper in the interests of the large unprivileged class of practitioners took its shape. The first preface had courage, for the young editor declared that he would "produce a work that would convey to the public and to distant practitioners, as well as to students in medicine and surgery, reports of the metropolitan hospital lectures" \* \* \* "and a correct description of all the important cases that may occur, whether in England or any part of the civilized Continent" \* \* \* "while our columns will not be restricted to medical intelligence."

### Fiery Comment Attracted Notice

The earliest number hardly lived up to this brave program, but the ordinary conventions of language were observed in them, and few could have guessed what a train of powder was being laid, shortly to be fired.

The scientific deliveries of the hospital leaders were printed in these early numbers and the authors, seeing themselves in type, for the most part for the first time, only pretended to object to the publicity. The comments upon hospital management were restrained, and the only articles adumbrating the kind of ferocity which was soon to mark the pages of the paper were directed not against a hospital leader but against a highly scandalous clergyman.

Soon, however, some reflection upon the conduct of certain of the great metropolitan charities frightened the hospital authorities, and it was the attitude displayed by them, in their trepidation, which ushered in a period of violent recrimination. The authorities, determined to shut down upon Wakley's criticisms, forbade him to enter the walls of the charities which they managed, threatened all who helped him in producing his paper with expulsion, stigmatized the issue of hospital lectures as a theft from the authors, and hinted that Wakley himself was a discredited adventurer, a failure in his profession and suspected of arson.

### A Ten-Year Quarrel

Thus there was started between *The Lancet* and the leaders of the medical profession in London a quarrel

which raged furiously for ten years, which spread in unexpected directions, and which took fifteen years and more to die down.

Many of the episodes in the quarrel were of a highly dramatic nature, and between 1823 and 1833 the paper was engaged in ten actions at law, its opponents being eight separate persons. They denounced Wakley as a literary pirate and a disseminator of moral garbage; he pointed to his growing circulation as a proof that he was supplying information that was valuable and valued, bestowed nicknames with cruel point upon persons who were leading lives of sheltered dignity, and not only hinted at astonishing revelations that would follow on the publicity which he intended to give to hospital affairs, but practically accused a famous surgeon of having murdered a patient in the operating theatre through ignorance and loss of nerve.

Considering the seriousness of the charges and counter-charges brought, the damages which passed, now one way and now another, may be considered small, but whichever side was successful was always injured in the eyes of the juries by its own indecency. In six actions for libel during these years, the aggregate sum of £8,000 sterling was claimed from Wakley while the aggregate sum of £155.0.  $\frac{1}{4}$ d was awarded to the claimants, the odd farthing being paid as a penalty for a particularly venomous slander.

Always Wakley's damages and expenses were paid by public subscription—this all the more readily because those expenses were low, for Wakley had the wit and the nerve to be his own advocate.

In the course of these actions evidence against Wakley was given frequently by men in high position in the Royal College of Surgeons of England, of which corporation Wakley was a member, and his attention was thus directed to the management of the college. Wakley exposed, often in brutal language, the abuses possible under the Constitution and conduct of the college; he declared that its small ruling body, the council, was self-elected, that the body went on electing themselves until they were senile, which did not preclude them from taking money as examiners, and that consequently the college played into the hands of its own prominent members, who formed the teaching staffs of the metropolitan hospitals, but who neglected their duties as teachers.

Wakley was expelled from the building of the college by the police, after having moved successfully a vote of censure at a general meeting upon the President and council. More libel actions ensued, an attempt on Wakley's part to found a rival institution to the college showed him the futility of his attempt to deal in the pages of a class newspaper with issues that were now becoming national, and he determined to enter Parliament as a sort of "Member for Medicine." In 1837, just as Queen Victoria ascended the throne, Wakley became M. P. for a big London constituency.

#### Action in Parliament

From this time forward he was a changed man, and his paper ceased to advocate tearing down things and adopted the finer policy of construction. He realized that many of the abuses against which he had fought successfully were not inherent in the institutions which he arraigned, but were due, though in an indirect way, to the anomalous position of the medical practitioners as a mass. Some of them were admirably educated and some were not, and there was no sure way in which the public could discriminate between the qualified and the unqualified man.

So Wakley projected a medical bill in the House of

Commons under which a central authority should be set up to keep an official roll of the medical profession and to standardize the education of the students seeking admission to that roll. Wakley's bill was short and clear; it did not succeed in getting upon the statutes, but it was the germ of the Medical act, which shortly followed, and under which the medical profession in Great Britain today functions in good order.

The efforts of Wakley and his powerful lay associates in the House of Commons were reported regularly in *The Lancet*, and the story of the paper is thus brought up to the middle of the eighteenth century. Thereafter a few brief notes on the main points will suffice to show how the precocious and ill-mannered child became a sober man.

Thomas Wakley, the founder, associated with himself in the editorship his second son, James Wakley, who at the death of his father in 1862 was for a brief period sole editor, but who shortly afterward invited the collaboration of an elder brother, the second Thomas Wakley. Their period of joint administration lasted until 1886, and their principal contribution to public welfare was the founding of informal commissions, "The Lancet Analytical and Sanitary Commissions," to inquire into public abuses. The finding of these commissions were published fearlessly. In their way the horrors of poor law infirmaries were dragged into the light to be rectified, while contamination and adulteration of foodstuffs was shown to be prevalent, and the offenders were pilloried. The work is now done under acts of Parliament, which it was prophesied must come.

James Wakley was also one of the founders of the Metropolitan Hospital Sunday Fund, a movement which inaugurated a method of collecting money for the voluntary hospitals, which has since been remarkably developed by other bodies. He died in 1886, when the second Thomas Wakley called to his side his son, the third Thomas Wakley, the father and son editing the paper together until the death of the former in 1907 at the age of 86. The third Thomas Wakley died two years later, when the present editor, who had been associated with the paper for fifteen years, was appointed, thus breaking a remarkable family tradition. For surely it cannot have happened often before that three generations of one family should not only own but edit a newspaper founded by the eldest.

Throughout their tenure of office they all kept steadily before them the primary aim of the eldest of them to raise the professional status of the doctor and disseminate accurate information.

I refrain for obvious reasons from mentioning or commenting upon the activities or aspirations of the paper under recent direction. We have left undone things which we ought to have done, and many things which we have done have not fulfilled their objects. But we have spared no pains to maintain the status of medicine and to assist in the progress of medical science by the diffusion of its hopes, its tenets and its results. And we have been splendidly helped by the leaders of medicine everywhere.—*New York Times*, Oct. 28, 1928.

#### The League and World Health

If the League of Nations had done nothing more, its contribution to the health of the world would justify its existence. The far-reaching triumphs of the Geneva organization in this direction are impressively set forth by Dr. George E. Vincent of the Rockefeller Foundation.

Out of the co-operation of nations, made possible by Geneva, has developed something in the nature of an international health board. Health officers are sent

throughout the world to study public health and means of preventing the spread of disease and epidemics. It is now possible for the entire world to know of the existence of serious communicable diseases in remote places and to guard against their spread. Plans are being made for a wireless station at Geneva to facilitate the protective battle against these diseases. Countries hitherto indifferent to or backward in public health measures have awakened to the importance of preventive and protective laws, and France, which had been especially neglectful, has, under the inspiration of the work being done by the League, increased its appropriations for health purposes 40 per cent.

Not only are the nations now co-operating for peace, they are co-operating under the best scientific guidance for human welfare generally.—*Evening World*.

### The Minute in Nature

We have before us the manuscript of an address, entitled "The Minute in Nature," which was delivered by Professor L. W. Bailey, of Fredericton, N. B., on January 7, 1874, at Providence, R. I., probably before the Franklin Society of that place.

L. W. Bailey, LL.D., F.R.S.C., was Professor of Natural History in the University of New Brunswick, and one of the early members of the Royal Society of Canada. Professor Bailey did much for the geology of the Maritime Provinces, and those who had the privilege of his acquaintance will remember well his learning, and his keen intellect, and the numerous and valuable contributions to his subject which he presented to the Royal Society. Such were his zeal and industry that he prosecuted his observations until but a short time before his death, which occurred at a ripe old age.

The address in question exhibits wide scholarship and is written in a lucid, easy and altogether charming style. Its purpose was to bring to the notice of a mixed audience the importance of the infinitely little, and to trace the play of law and order in realms unknown to those without scientific training. The portions which interest us specially are two or three pages dealing with bacteria and their relationship to disease, a subject that was very much in the air at the time of Dr. Bailey's lecture.

"The opinion that various contagious diseases are produced through the agency of minute living beings, filling and polluting the air, seems to have prevailed from quite an early period, and the statements of some of the earlier writers upon this subject are interesting as showing to what extremes the imagination may be carried through the influence of ignorance of superstition.

"Thus a writer in the Philosophical Transactions of the British Royal Society for 1677 gravely proposes to frighten and scatter these pestiferous armies by the noise of drums, trumpets, and cannon, especially recommending the cheerful shouting of women and children for this purpose. Another writer believed that the whole air was filled with little men and animals, countless numbers of which are inhaled and respired with every breath. It was the opinion even of many distinguished physicians in France, Italy, and England that the plague was produced by microscopic animalcules, and that the pestilence which raged in Marseilles in 1720 was to be ascribed to mite-formed animalcules, with crooked beaks and claws.

"Though many of these opinions were obviously absurd, and the result of visionary theories which the advance of knowledge could not fail to do away with, yet the fact that organic germs do exist in countless numbers in the atmosphere, in water, and even as parasites within

the bodies of living animals, and that they are intimately connected with the development and spread of infectious diseases, cannot be doubted. There is not, indeed, a single animal, not even excepting man himself, which is not more or less infested by internal or external microscopic parasites. The facts to which I have alluded, that in their larval form they withstand changes of condition ordinarily fatal to most animals and are thereby rendered well-nigh indestructible, explains the readiness with which they may be diffused, and the difficulties to be overcome in causing their extermination, while their wonderful rapidity of reproduction will readily account for the quickness with which epidemic diseases, if really attributable to them, may be extended over large areas. Like the seeds of plants they may retain their vitality for indefinite periods, springing into active life only when they meet conditions favorable for their development. Thus they may remain dormant, and therefore harmless, in the body of one animal, while received with the food into that of another, they may there multiply with astonishing rapidity, impairing the health if not destroying the life of the person thus afflicted. A sufficient safeguard against such injurious results, so far as they are dependant upon the use of animal food, may be found in a thorough *cooking* of that food, a temperature of 212 deg. being probably sufficient to destroy all animal germs, but those which are introduced by respiration into the lungs are not so easily guarded against. The only effectual remedy, so far as the latter are concerned, is the preservation of the body in a healthy state, which is unfavorable for the growth of these parasites, and the removal, in large communities, of all collections of filth and putrescent matter, from which such seeds of malaria may spring."

The extract quoted above shows that Professor Bailey was a convinced believer in the etiological relationship of living organisms of microscopic size to infectious disease, and this at a time when the complete scientific proof was lacking. As he points out, the idea was not new. In fact, more than one great name might be brought forward among them Fracastorius (1546), Kircher (1658), Plenciz (1762), and Henle (1840), as favoring the doctrine of a *contagium animatum*. These men, however, were merely indulging in prophetic visions. The proof of the correctness of the theory was the work of Pasteur, Lister and Koch. Lister, under the inspiration of Pasteur's work on fermentation, as he states in his famous letter to Pasteur in 1874, had been practicing the antiseptic method of wound treatment for nine years. Pasteur, in 1874, was definitely advising the sterilization of all surgical instruments by passing them through a flame, and he also advocated the sterilization of all surgical dressings, by heating them to a temperature of 150 deg. C. before using. Davine had discovered the bacillus of anthrax in 1865; and Villemin in 1868, and Klebs in 1873, were asserting the infectious nature of tuberculosis, on the basis of their researches. Pasteur was working on the anthrax problem during the same period, and had practically proved that the bacillus of Davine was the cause of the disease, though it was left for Koch to put the final touches to the work and make the matter a scientific certainty, which he did in 1876. Bailey must have been aware of what was going on, probably through his father, Professor J. W. Bailey, the microscopist of West Point, and through his own studies. His mind was quick to grasp its importance, and his researches into "The Minute in Nature" led him to appreciate the reasonableness of the "germ-theory" and to state clearly certain practical measures which he felt could be adopted to prevent and control infectious disease. His name may well be hon-



ored by us as that of a man of vision, one of those who forecasted the discoveries which, indeed, were on the brink of being finally demonstrated through the experimental research of his great contemporaries.—A. G. NICHOLLS, in the *Canadian Medical Assn. Journal*, April, 1928.

#### Lines to Croton Oil\*

Oh! Croton Oil,  
You're full of toil—  
I wonder, is it worth the spoil?  
Life is sweet,  
If hard to beat;  
So Croton Oil you played the game  
With bitter and ironic twitter,  
Of me you nearly made a quitter;  
But ruled by Fate you played your rôle  
And surely kept me off a litter;  
So you, like life, tho' cruelly bitter,  
Are in disguise a loyal hitter.

—A Physician's wife.

\*The foregoing lines were written by the wife of a distinguished colleague of New York City after recovery from a fecal impaction which had been relieved by 5 drops of Croton Oil in divided doses over a period of 48 hours.—Ed.

## Correspondence

#### Biography of General Leonard Wood

To the Editor of THE MEDICAL TIMES:

I am engaged on the authorized biography of General Leonard Wood, who, you will remember, started his career as a physician, entering the United States Army in 1885 as a contract surgeon. It has occurred to me that some of your readers might have had contacts with General Wood and might be willing to tell me of them, or to send me any letters from the General, or any unusual photographs, which they may have.

I should appreciate it if you would call this matter to the attention of your readers.

Yours sincerely,

HERMANN HAGEDORN.

Washington, D. C.

#### Fracture Treatment To-day

There is no general fund of surgical knowledge regarding fractures which permeates the profession, such as exists in connection with pathological surgery. A person has an attack of appendicitis. Instantly the professional man in charge of that case reacts to what should be done. In connection with fractures, the situation is hazy and there are doubt and uncertainty as to the immediate steps to be taken. I believe that with the improvement in fracture treatment, with an increased knowledge of the results of fracture treatment, here will come a time when there will be general information thruout the profession as to the wise thing to be done at the outset in every fracture case. When this time arrives, the ideal treatment will be the initial treatment and the initial treatment will become the ideal treatment which may be contained thruout the whole course of the case.

The deeper one goes into any particular problem the more important that problem seems to be to the individual. I believe that today there is no problem in the whole of surgery more important than this subject of the treatment of fractures. There is a demand for a higher standard of result following a fracture than ever before. The economic importance of a fracture is coming to be understood and recognized. We are judging of the results of fracture treatment by the restoration of the function of the part injured. These three facts are so new that the whole subject of traumatic surgery assumes an importance which a few years ago would have been unbelievable.

And finally, I believe that the recognition of the importance of securing good function is illustrated by the fact that in injuries near to joints, the prolonged immobilization has been done away with and we see an early active guided movement employed, securing for the patient greater joint movement, rather than the stiffness and disability which formerly resulted.

—Charles L. Scudder, M.D., in *New York State Journal of Medicine*.

## The Physician's Library

**An Apostle of Joy:** A Little Book of Pleasant Verses. By George Burt Lake. 48 pp. Northshore Publishers, Highland, Illinois. 1928. \$1.25.

In this little book, the accomplished editor of *Clinical Medicine and Surgery* displays a facile gift in the field of verse. In the forty-two subjects treated there is revealed a most interesting versatility in versification. Here are the body and the soul of good poetry. The author is especially to be thanked—and his uniqueness noted—because of the fact that he does not talk shop; he is a medical man whose interests and culture are not, as is so often the case, limited to one art, glorious though that art be. Whenever you wish to enter another world for a little while, and that a world of beauty, have Dr. Lake's lines handy, and the magic will work.

**The Duodenum.** Medical, Radiologic and Surgical Studies. By Duval, Roux and Béchère of the Surgical Clinic, Faculty of Medicine, Paris. Translated by E. P. Quain, M.D., St. Louis. The C. V. Mosby Co., 1928. Pp. 212.

This book gives the point of view of a physician, a surgeon and a radiologist, a fusion of data acquired by each. It is rather remarkable that a book which was originally prepared in 1923 should, to-day, be thoroughly up-to-date and extremely valuable, for it brings to light many obscure conditions which have been neglected. Dr. Quain has made an excellent translation from the French; the authors have arranged the text in a way that makes it difficult to leave the volume once it has been opened. The consideration of periduodenitis is a masterpiece and will clear up many questions about post-operative pains after cholecystectomy. The electrotypes well illustrate the roentgenograms and the drawings are beautifully made. The roentgenograms could be better, although they were taken in 1923, yet those of George and Leonard in their book published in 1915 were far clearer. (It is a pity that this book of George and Leonard is out of print.) The authors give full credit to George and Leonard, Cole and other Americans who have worked along similar radiologic lines. There is a typographical error in all the page headings from pages 179-205. The word "relation" should be "retention". I always admire Mosby's artistic printing. All in all, this book cannot be recommended too highly. M. W. T.

**The New York Academy of Medicine Lectures on Medicine and Surgery.** First Series, 1927. 39 illustrations. Paul B. Hoeber, Inc., New York, 1928. Pp. 319. Price, \$5.00.

The contributors to this valuable volume are Harlow Brooks, John F. Erdmann, John E. Jennings, Samuel J. Kopetzky, Emanuel Libman, George MacKee, James Alexander Miller, Lewis K. Neff, John O. Polak, Eugene Pool, David Riesman, Max Schlapp, John M. Wheeler, Herbert B. Wilcox and Shirley Wynne. The subjects cover a wide field, including treatment of cardiovascular syphilis, intestinal obstruction, treatment of pneumonia, contagious diseases, and many others. The book is beautifully printed and the half tones are excellent. Mr. Hoeber is to be congratulated for his efforts in bringing the academy lectures to those who cannot hear them. The reviewer has heard most of the lectures as they were given but finds it well worth time to re-read them.

**Gynecology.** By Howard A. Kelly, M. D., and collaborators. D. Appleton and Co., New York and London. Pp. 1043. 1928.

It is always a pleasure to review Dr. Kelly's books. He writes in a style that makes it difficult to leave the volume. In this work, Dr. Kelly has written eighteen chapters and his able collaborators have contributed thirty-one. Undoubtedly it is one of the most valuable works we have on gynecology. There are 767 illustrations and 14 plates. The colored figures are beautifully done. The illustrations alone are worth the cost of the volume. Dr. Kelly devotes a good deal of space to therapeutics; this is a great help to the practitioner who desires something to relieve his patient. Protein therapy, x-ray, radium, and endothermy are considered. If my predictions come true this edition will be very popular and will soon be exhausted.

**International Clinics.** Volume 3. 1928. J. B. Lippincott Co., Philadelphia and London, 1928. Pp. 310.

Dr. Sajous opens this edition with an able discussion on endocrinology. Raymond Pearl deals with Alcohol and Life Duration; also cancer from the viewpoint of the human biologist. Sir Humphry Rolleston writes on the clinical significance of abnormal blood-pressure. Bettman gives an interesting chapter on extra-pleural thoracoplasty. The reviewer always welcomes International Clinics as one of the best methods of obtaining the best there is in medicine and surgery.

**Recent Advances in Chemistry in Relation to Medical Practice.** By W. McKim Marriott, M.D. Illustrated. The C. V. Mosby Co., St. Louis, 1928. Pp. 141.

This small volume includes the lectures of the author before the San Diego Academy of Medicine, in 1927. It is a summary of the present knowledge concerning important phases of chemistry, with special relation to clinical medicine. Diets for disease are considered,—fever, anemia, diabetes, nephritis, during pregnancy, obesity, pellagra, during infancy, etc. A splendid chapter on the endocrines concludes the book, giving as it does the newest ideas on the subject. A physician will do well to acquaint himself with these newer advances in chemistry.

**Pocket Medical Formulary.** By W. E. Fitch, M.D. F. A. Davis Co., Philadelphia, 1928. Pp. 501. \$3.00.

This handy volume of more than five hundred pages fits the pocket or bag. It is one of the best we have seen, crowded as it is with a great deal of information. Alphabetically, diseases are considered and prescriptions given; all of the formulae conform with the latest edition of the Pharmacopoeia. This part covers about 350 pages. The appendix considers the formulae and doses for hypodermic medication, formulae for fluid foods, diet lists for various diseases, chart of contagious diseases, tables of differential diagnosis, dose table, weights and measures, poisons and antidotes, and the physicians' interpreter, consisting of several pages of questions in four languages, which will enable the physician to get the most important phrases pertaining to medicine. All in all, it is one of the most valuable epitomes we have seen.

**Ultraviolet Rays in the Treatment and Cure of Disease.** By Percy Hall, M.R.C.S. C. V. Mosby Co., St. Louis, 1928. Pp. 236.

This is the third edition of a valuable work on the subject of ultraviolet rays, considering the subject from every angle. The author deals with sunlight, infra red rays, the carbon arc lamp, the quartz mercury vapor lamp, the tungsten arc lamp, technique of administration and there are several chapters on the actual diseases treated by this modality. The author deals well with his subject.

**Chemistry in Medicine.** The Chemical Foundation, New York. Edited by Julius Stieglitz, 1928. Pp. 757. \$2.00.

An interesting volume showing recent developments in chemistry in medicine, covering heredity and development, story of the discovery of vitamins, conquest of dietary diseases, chemical regulators of the body, policing of civic life in the laboratory, and the alleviation of suffering. This last chapter takes up general anesthesia, local anesthesia, first aid for insomnia, chemistry of high blood pressure, and chemistry and the kidneys. Every physician should read this book.

#### Commercial Standard for Clinical Thermometers Adopted

A general conference of manufacturers, distributors, and organized users of clinical thermometers recently held at the Department of Commerce, Washington, D. C. approved a proposed Commercial Standard which established the minimum requirements in the manufacture of thermometers of this character.

The conference agreed that the manufacture of new thermometers under the standard will begin October 1, 1928 and allowed one year, i.e., until March 30, 1929, for clearance of existing manufacturers' stocks. Annual revision of the standard will be conducted by a standing committee, representative of the industry.

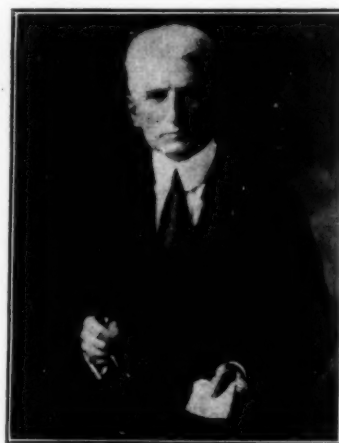
The conference favored the promotion of foreign commerce in clinical thermometers, based on the adopted standard. The standard will be translated into Spanish and Portuguese. Acceptance by manufacturers, distributors, and organized users, representing 65 per cent. of the total volume of the industry, is necessary before the program can be promulgated as a Commercial Standard of the Department of Commerce.

The industry is determined to market only accurate and reliable clinical thermometers. Each thermometer will be certified by the manufacturer to comply in all respects to the requirements and tests of the standard adopted.

Members of the Standing Committee are as follows: Bradford Noyes, Jr., of the Taylor Instruments Companies, Rochester, N. Y.; William L. Crouse of the National Wholesale Druggists Association, Washington, D. C.; Friend Lee Mickle of the State Department of Health, Hartford, Conn.; Dr. W. P. Morrill of the American Hospital Association, Washington, D. C.; Dr. A. C. L. Percefull of the U. S. Veterans Bureau, Washington, D. C.; Herman Phillips of the Phillips Thermometer Co., New York City; Otto W. Schlegelmilch of

#### New Head of American College of Surgeons

Franklin H. Martin, C.M.G., M.D., D.P.H., LL.D., D.Sc., D.S.M., F.A.C.S., President of American College of Surgeons,



Chairman, Board of Directors, Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc. Managing Editor, *Surgery, Gynecology and Obstetrics*.

Schlegelmilch Bros., Long Island City, New York; and Dr. E. F. Mueller of the Bureau of Standards, Washington, D. C.

The Commercial Standard as adopted provides that every individual maximum self-registering thermometer sold or offered for sale to measure body temperatures shall have met all of the requirements specified herein. All thermometers shall meet the following requirements as to construction:

Fahrenheit thermometers shall be graduated in 0.2°F, each degree mark and the mark at the normal point shall be longer than the intervening lines. Centigrade thermometers shall be graduated in 0.1°C, each degree and half degree mark shall be longer than the intervening lines. Numerals shall be etched on the scale at even numbered degree marks on Fahrenheit thermometers, and at every degree mark except as hereinafter provided, on Centigrade thermometers. There shall be not more than 10°F or 5.5°C per inch of scale. All thermometers shall be free from any defects which impair the reliability or seriously mar the appearance. The range of scale shall be at least from 96°F or 35°C, to 106°F, or 41°C. The 96°F mark or the 35.5°C mark shall be not less than one-half inch from the top of the contraction, that is, from the point at which the capillary resumes its normal shape above the contraction. Bulbs shall be made of Corning normal, or equally satisfactory thermometric glass. Colored bulbs shall not be used. Each thermometer shall bear in legibly engraved characters, the name or trade mark of the manufacturer and either a serial number, or a serial number and year, to provide complete identification. The normal point, except for veterinary use, shall be designated by an arrow or other suitable mark at 98.6° on Fahrenheit thermometers and in lieu of the numeral 37 on Centigrade thermometers.

**Character of Pigment**—Sample thermometers shall be immersed in a 5 per cent phenol in water solution for a period of one hour at a temperature above 70°F without the indication of removal of the coloring matter or its appearance in the solution. All thermometers shall retain their pigment after the completion of all tests herein required.

**Test for Entrapped Gas**—In some cases gas is detected in the preliminary examination but its presence is not always detected in thermometers which have gas pocketed in the bulb or construction. All thermometers shall be heated to about 96°F and the mercury above the constriction shaken off. The bulbs only are then cooled to 32°F or below, and may be manipulated by any method (except tapping or striking any part of the thermometers upon any surface whatsoever, unless the manufacturer desires to do so), to bring the gas to the top of the bulbs. When the bulbs are heated after this operation the mercury from the bulbs shall reunite with that in the bores.

**Hard Shaker Test**—All thermometers, after having been heated to 106°F or 41°C shall be mounted in a centrifuge with the ends of the bulbs 17 cm. from the axis of rotation. When whirled at a speed of 580 revolutions per minute the index shall fall below 96°F or 35.5°C.

(Concluded on page 20)